

















DEPARTMENT OF THE INTERIOR

---

R E P O R T

OF THE

DIRECTOR OF  
THE NATIONAL PARK SERVICE

TO THE

SECRETARY OF THE INTERIOR

FOR THE

FISCAL YEAR ENDED JUNE 30, 1924-<sup>26</sup>  
AND THE TRAVEL SEASON, 1924



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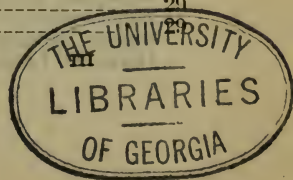
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# ANNUAL REPORT OF THE DIRECTOR OF THE NATIONAL PARK SERVICE

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DEPARTMENT OF THE INTERIOR,  
NATIONAL PARK SERVICE,  
*Washington, D. C., October 8, 1924.*

SIR: This eighth annual report of the National Park Service covers briefly the tourist season just concluded and the fiscal affairs of the bureau for the year ended June 30 last.

I am very much gratified to be able to report to you, Mr. Secretary, that in every branch of our park activities during the season just closed we have achieved successful results that will be directly beneficial to the parks themselves and also inure to the benefit and enjoyment of visitors in the future.

## TRAVEL INCREASES DESPITE ADVERSE CONDITIONS

While not showing the large increase in park travel that we had expected and had prepared for, because of adverse conditions in some localities and the general tightness of money throughout the country, nevertheless we can point to a very substantial gain over the sum total for last season. In California the severe outbreak of foot-and-mouth disease and stories of extensive forest fires within the State retarded tourist travel, and these causes were reflected particularly in the reduction of visitors to the Yosemite, bringing the record in that park below last year's. The total for the season in all the national parks and monuments was 1,670,908, compared with 1,493,712 for last season. It evidences conclusively a larger use of the national parks from year to year.

## THE ONE FEDERAL AGENCY PROMOTING TRAVEL

The National Park Service is the one agency of the Federal Government that has been actively engaged for the past eight years in developing the tourist business in this country in the attempt to get our people to see the beauties of their own country, and the national parks first of all. Established by Congress on August 25, 1916, and organized for effective business early in the following year, it has been striving by diligent and persistent publicity to bring the supreme natural exhibits of our country vividly to the attention of the American people.

The bureau was created primarily to "promote and regulate the use of the Federal areas known as national parks, monuments, and reservations \* \* \* by such means and measures as conform to the fundamental purposes of said parks, monuments, and reserva-

tions, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

This, then, has been its main endeavor. Economically, however, the results of its efforts went a great deal further. The tourist business is now recognized as one of the great money-making industries all over the world. There is probably no other industry that imparts as much genuine pleasure and satisfaction for the money laid out. Millions upon millions are annually spent in journeying, which has its compensation not only in enrichment of life and living from a pastime standpoint but also in developing the health and enlarging the general education of the human being.

#### FOREIGN COMPETITION FOR TRAVEL AGGRESSIVE

The tourist business has for many decades been recognized by foreign countries as an important revenue producer, and no effort has been overlooked, by judicious advertising and by subsidizing steamship lines, to bring visitors to their shores to view the scenic and historic attractions. Tourist bureaus for inducing European travel since the war have sprung up like mushrooms in our larger cities, particularly in the East. France and Spain have established Government tourist bureaus, and Germany and Italy are well along in their plans for establishing similar service. Alluring advertisements to the American traveler to visit the war-torn fields of central Europe meet the eye everywhere. Not a single opportunity has been missed to expand the business to the old-time proportions that served to fill their coffers. Small Switzerland lives on practically nothing else than the income from selling her scenery. Furthermore, the national park movement in this country has been so successful that foreign countries, in an effort to enlarge on the opportunities for sightseeing presented their own people and visitors, have begun the creation of national parks within their own borders as travel objectives. The Canadian and Australian national parks, modeled after our own, present some of the greatest assets of those countries. Japan has been sending its expert investigators through our national parks for three or four years, and as a result several national parks have been projected, patterned after our own. Our Latin-American brothers to the south have made a beginning on national parks.

#### TRAVEL AT HOME AND ABROAD

All of these examples emphasize the tremendous value, both from an idealistic and a dollars-and-cents standpoint, of our national park system, which holds the most supreme, and stupendous, and spectacular of our natural scenery. The establishment of the National Park Service in 1916, therefore, presented fine opportunities for furthering the economic development of the country through developing the national parks as the great recreation grounds of the country. A few statistics in this connection will be generally interesting. Figures recently gathered of departures of American citizens from United States Atlantic ports from 1913 to 1923 compared with



national park and monument travel during those years are given in the following table:

	1913	1914	1915	1916	1917	1918
Foreign travel.....	245, 192	285, 007	-----	74, 375	65, 416	218, 820
Travel to national parks and monuments.....	251, 703	235, 193	334, 799	356, 097	488, 268	451, 661
	1919	1920	1921	1922	1923	1924
Foreign travel.....	180, 584	144, 215	225, 160	271, 906	241, 640	-----
Travel to national parks and monuments.....	809, 702	1, 058, 455	1, 171, 796	1, 216, 490	1, 493, 712	1, 670, 908

Foreign travel figures are not available. These figures tell an important story.

### THE DEMAND FOR NEW NATIONAL PARKS

The acknowledged popularity of the present national parks and their value economically to neighboring territory in particular, as well as to the entire country in general, has resulted in vigorous demand by various localities in sections where there are no national parks for the creation of parks to include areas that appear to them to have merit for such distinction. Annually many bills are introduced in Congress for new national parks. The Government has been generously responsive to the general demand for the proper protection of scenic points of supreme public interest. States and counties are falling into line by conserving areas that have great local value as recreation places for their rapidly increasing population. We can not have too many breathing spaces reserved for our people and if we do not look toward the future by the setting aside of State and county and national parks the Nation will find itself in the position of many large cities that now have to pay a high price for the lack of foresight of their founders in not setting aside sufficient areas to serve as parks and breathing spaces for their rapidly congesting population. Parks can be enjoyed by everybody and it will be wise to preserve every place that can be secured even if it takes an effort and some money. Coming generations will thank those who now assume this as an obligation and duty.

### PRESENT SYSTEM WISELY DEVELOPED

The present national park system has, however, been built upon a special foundation. In general the policy of considering and admitting to the system only those areas giving expression to the highest types of scenery has been quite consistently followed. The national park system has been developed along wise and sane lines and it will take wise and sane judgment to resist the demand for inclusion of areas that do not measure up in the highest terms to the high standard that has been set for that system. Only after the most careful and painstaking investigation on the part of experts, either officials of the department and the National Park Service themselves, or by special committees of private citizens who are expert on park matters, followed by a reviewing investigation of

Government officials, should new areas be favorably considered. There are many important problems of policy and administration that must be determined and settled before the stamp of approval can be affixed. The problem involved by the inclusion of private land in park areas is a serious and important one. Of far greater importance, however, is the necessity of avoiding a duplication of exhibits in the park system. There is no duplication at present and we must build with circumspection.

#### FURTHER POSSIBILITIES CONSIDERED

In reviewing the possibilities for further national park creation west of the Mississippi I can see very few additional areas that should be considered. There is no doubt that a typical section of the forest growth of northern California, including particularly the Sequoia Sempervirens, should be included in a Redwood National Park. The Save-the-Redwoods League of California has accomplished remarkably successful results in the preservation of stands of this majestic forest giant, and an act, Public No. 871 of the Sixty-sixth Congress, authorized the investigation of the availability of a suitable tract for national park purposes. I am hopeful that this park will become an accomplished fact within a few years. An area including and adjoining the Bandelier National Monument in New Mexico merits thoughtful consideration. A typical section of the "bad lands" of the Dakotas or Wyoming and a similar exhibit of the southwestern desert area with all its wonderful desert growth present possibilities for consideration. This review does not include any enlargement of existing parks or rectification of their boundaries.

East of the Mississippi we are going to encounter difficulties in the creation of national parks, for the reason that practically all areas have long been in private ownership. The settling of the Atlantic seaboard in the beginning of our Nation resulted in the distribution of land by sovereign grant and otherwise, which in the ensuing years alienated all the eastern Government-owned land. All the national parks, with the exception of Lafayette in Maine, which was built up from donations, by public-spirited private citizens, of land or money from which land could be purchased, have been carved from the public domain by special acts of Congress. Consequently the Congress will doubtless have to make appropriations of Federal funds for the acquisition of land for national park purposes if the popular demand is to be met for the creation of a few national parks in the crowded East, where they are so badly needed. Under the Weeks Act the Government has been enabled to purchase lands for forest and stream protection in many eastern sections.

#### A STUDY OF THE SOUTHERN APPALACHIANS

At this writing you are, through the medium of a commission composed of five of the highest private experts on park matters in the country, making a careful study of the Southern Appalachian Mountains for the selection of the most typical section which could be recommended to Congress for a suitable national park site. Every indication is favorable to such recommendation for a permanent national museum of nature, established in the most scenic section of



the Southeast. I believe the South stands strongly and broadly for such a park wherever it may eventually be located and that purely local interests will be subordinated to achieve this remarkable opportunity. The selection of this park must be based on merit and merit alone. Its establishment will benefit every State in the South and East.

#### ISLE ROYALE A MERITORIOUS PROJECT

Another area in the East that has been submitted for investigation as to its availability for national park or monument status is Isle Royale, an island of 132,000 acres in Lake Superior, containing unusually fine virgin forests and abundant other plant and animal life. In view of assurances that privately owned land on the island would be turned over to the United States in case it is created a national monument, I personally investigated this area early in July. Interested citizens of Michigan and Minnesota are earnestly at work on this project, led by the enthusiastic example of the Detroit News, which has been taking the initiative in this matter, and I am very sanguine of favorable action. It is a meritorious project.

#### PRINCIPLE OF COMPLETE CONSERVATION GOVERNS PARKS

In the past few years in particular determined efforts have been made by private interests to invade some of the national parks for the utilization of some of their wonderful lakes, rivers, and spectacular waterfalls. Promoters of local power projects were after park waters for power and neighborhood ranchers after them for irrigation. The Yellowstone had to bear the brunt of such attacks. That park was surveyed from one end to the other. There was hardly a lake of considerable size or a portion of the park that was not affected in the campaign that appeared to be launched to secure a foothold. During the past year, however, these attempts were limited to three, one of which contemplated the damming of the Yellowstone Lake and the other two simply meant the excision of a very small section or part of the Rocky Mountain and Yosemite National Parks and their restoration to national forest status.

It should be observed that the Federal water power bill contained a provision permitting the use of national parks and monuments for water power purposes but due to the presentations made by this department that act was later amended on March 3, 1921, withdrawing all existing parks and monuments from the scope of that act. It is now necessary, therefore, that before areas of any park or monument can be utilized for water power or irrigation purposes, a special act permitting such use must be passed by the Congress. This provision has proven of inestimable value.

#### SMALL AREAS MORE VALUABLE FOR ECONOMIC USE ELIMINATED

During the last session two bills, H. R. 6421 and Public No. 172, were introduced for the excision of a small portion of two parks, the Yosemite and the Rocky Mountain, and comprising 25 and 345 acres, respectively, to permit their restoration to national forest status and its utilization thereby, under Forest Service regulations, for economic purposes. Both of these cases were thoroughly inves-

tigated by representatives of the department and the National Park Service, and approved, as being in an outlying portion of the park where the scenery would not be adversely affected, where the visiting public would not have a superior right, and where the projects were established as meritorious in every way. In such cases this procedure should always be followed, and such small areas found to be more valuable for economic purposes should be eliminated from the parks rather than permit the development within the boundaries of the parks.

#### ADVERSE REPORT ON YELLOWSTONE DAM BILL

The only other project proposed for the utilization of park areas was a bill, S. 311, Sixty-eighth Congress, first session, introduced by Senator Walsh, of Montana, "for the erection and maintenance of a regulating weir across the Yellowstone River in the State of Montana," which had been previously proposed in similar form and reported on adversely by the department. Your report of May 23, 1924, to Senator McNary, Chairman of the Committee on Irrigation and Reclamation of the United States Senate, read as follows:

I have your request of December 31 last for a report on S. 311, Sixty-eighth Congress, first session, a bill for the erection and maintenance of a regulating weir across the Yellowstone River in the State of Montana.

The primary purpose of this bill is to dam and control the waters of Lake Yellowstone so they could be used in connection with irrigation of lands in the Yellowstone Valley outside the boundaries of that park.

When the Yellowstone National Park, the first member of our world-famous system of national parks, was created by act of March 1, 1872, Congress specifically reserved and withdrew the area from "settlement, occupancy, or sale under the laws of the United States," and dedicated and set it apart "as a public park and pleasuring ground for the benefit and enjoyment of the people." The act also prescribed that all persons who locate, or settle upon, or occupy any part of the land thus set apart as a public park, except such as may be considered necessary to render service to the traveling public, should be considered trespassers and removed therefrom, and furthermore that the Secretary of the Interior should make and publish regulations that shall provide for the "preservation from injury, or spoliation, of all timber, mineral deposits, natural curiosities, or wonders, within the park, and their retention in their natural condition."

It is probably inevitable that settlement and development of areas adjacent to and surrounding the Yellowstone will carry with them impulses to utilize natural resources of the park for local benefit. This may then extend not only into the utilization of lakes and streams for water power and irrigation purposes, but also to lumbering and other industries. However, absolute preservation should be the unwavering policy of Yellowstone administration, for inestimably valuable and precious as this great park now is to the nation, it will prove of increasingly greater value with each passing year as the common heritage of coming generations. The intent of Congress in all legislation affecting the Yellowstone has been to keep this splendid wilderness area intact in its natural state, untouched for all time by the inroads of modern civilization, and 50 years of administration have served only to emphasize the importance of such a consistent policy of protection. Such also is the consistent policy of the whole national park system and we can not overlook the fact, from experience, that the use suggested by this bill for Yellowstone National Park, if adopted, will in practice become a dangerous precedent for similar industrial uses of other national parks. Any plan for the commercial exploitation of the park must therefore, in my opinion, by the very nature of its aims and purposes, immediately be foredoomed to failure, and I, therefore, can not recommend favorable consideration of the pending measure.



## EDUCATIONAL OPPORTUNITIES ADVANCED

While it is not possible to put into immediate practice all our plans for enlarged public service, I am particularly pleased with the gratifying advances made in the development of the educational opportunities offered within our national parks.

The historic phrase "for the benefit and enjoyment of the people," first used by the National Congress in the organic act of 1872 creating the Yellowstone National Park, means a great deal more than mere physical recreation or even conservation.

The parks in themselves present the range of American land forms. Volcanic, granitic, and sedimentary rocks are exhibited in the most extraordinary examples. The origin and development of river systems, deserts, plains, and mountains, and other processes of world-building—erosion in the fullest range and dramatic presentation—the wild animal life for scientific study; the forests and other floral exhibits under the untouched handling of Nature; all these can be studied to unusual advantage in these primeval wilderness areas.

## MUSEUM EXPANSION

By far the greatest advance was made in the expansion of the museum service. With the exception of a small adobe museum at the Casa Grande National Monument in Arizona, erected some years ago at a cost of \$1,200, Congress has not granted funds for the construction and equipment of museums in the national parks. We have been able to appoint a few naturalists in several of the larger parks, and also a limited number of ranger nature guides, helped out by occasional private donation of funds for such purposes, but most of the museum construction, equipment, and materials that we now have has been secured with the aid of private funds.

What will be probably the most remarkable example of museum construction in the entire park system is developing in the Mesa Verde National Park under the supervision and guidance of Supt. Jesse Nusbaum. A born organizer and doer, with excellent training as archeologist, he brought with him upon his appointment as superintendent in 1921 a record of achievement in museum construction and archeological research work that might be envied by many older scientists. Located in the midst of a rich field of museum material as yet practically untouched, Mr. Nusbaum interested Mrs. Stella Leviston, of California, in the possibilities of a modern structure to house the precious relics of the ancients that are gathered from time to time from the burial grounds and ruined cliff dwellings within the park. Mrs. Leviston advanced funds with which a beginning could be made on a wing of the structure, and construction on this has been under way during the summer. In his museum design, and in fact in all the new buildings constructed from year to year in the park, Mr. Nusbaum is using an adaptation of the early pueblo, which harmonizes well with the old ruins and the general spirit of things and leaves an impression of true fitness with the surroundings that is at once satisfying and real. Mrs. Leviston's donation has been augmented from another private source to enable the completion of the wing and its equipment.

In the Yellowstone National Park Superintendent Albright has prepared space in one of the large Government buildings at headquarters and started his park naturalist on the collection of exhibits and the preparation of botanic, mineral, and animal specimens, which has already resulted in a very remarkable museum collection. The space available, however, is already overcrowded and can not house all the important exhibits, including historical, that could be made available for the enjoyment and study of the visitors.

Small beginnings have been made in several of the other parks, that the next few years will see augmented to large proportions, particularly in the Sequoia, Grand Canyon, Mount Rainier, and Rocky Mountain Parks.

Several years ago, to test out the popularity of museum development, I authorized the beginning of a small museum in the Yosemite National Park. No funds were available except for the payment of the services of a ranger-naturalist who in addition to his duties as naturalist had to be available for any ranger duties that might be required of him. A small building was turned over to him and he at once set about collecting what material he could secure by donation. At the end of the first season, with what little time he could devote to the purpose, he had collected exhibits that were conservatively valued at \$30,000. Last year 58,811 people went through the museum. This year the visiting list was 52,816. His enthusiasm resulted, furthermore, in the donation of some \$6,000 or \$7,000 from private funds toward a new and adequate museum and its equipment. Donations of exhibits have been promised from many quarters as soon as a fireproof building is erected to house them safely.

#### ASSISTANCE OF LAURA SPELMAN ROCKEFELLER MEMORIAL

Realizing the great importance of emphasizing the educational value of the national parks, serving thousands of visitors as they could by an intelligent introduction to what they would be able to find within the parks, the American Association of Museums made a careful study of these opportunities and developed certain concrete plans looking toward the establishment of small natural-history museums in a number of the larger parks. The association succeeded in interesting the Laura Spelman Rockefeller Memorial in this work and secured an initial grant of \$70,500 for the construction of an adequate fireproof museum building, including equipment and other important accessories, in the Yosemite National Park. In view of the great importance of this project the American Association of Museums appointed a committee to further the movement. In making their address to the memorial, this committee at a meeting held June 18, 1924, said:

If a museum (installed and supervised by a trained scientific staff) should be located in each of the more important national parks, and would take upon itself the preparation of the visitor for a profitable sojourn within the reservation, thus enabling him the better to understand the physiography, the fauna, and the flora, and, in short, preparing him to use these parks and their resources as instruments of instruction, it is conceived that an important educational need would be met and the plan would meet with such universal approval as to lead to its general adoption.

This will be but the start in the installation of such facilities under expert private assistance. There is no doubt that the museums al-



ready begun or contemplated for construction will prove beyond peradventure of doubt the tremendous value of such institutions in parks where thousands of people annually gather for recreation and entertainment. A museum is a most valuable factor in drawing visitors, in awakening their interest, and in prolonging the length of their stay. It serves the visitors, and it serves the community as well. Knowledge creates interest. Interest adds to enjoyment. With this splendid start of the present year it will not be long before such exhibition places will be available in other parks and some of the monuments to place this educational work where it will enable the visitor to absorb the local scenery, local history, and natural history, and make his park visit truly entertaining and mentally profitable.

#### PARK LIBRARY IMPORTANT DETAIL OF MUSEUMS

One of the most important details of museum equipment is the development of an adequate library covering the park, its history and attractions, and in every museum there will consequently be space reserved for a collection of books covering these interesting details. Offers of donation of much valuable material have already been received and there is no doubt, once fireproof structures are provided, that the library shelves will be quickly filled with well-selected material.

#### NATURE GUIDE SERVICE

The park museums will also serve as the starting points for the nature-guide expeditions. Though our nature-guide service has as yet merely passed the initial stages, it has established itself as effective and popular. The trained guides take the interested visitors into the field, explaining the various kinds of flowers, birds, and animals encountered along the trail, and giving scientific interpretation of the geologic formations or natural curiosities. As practically all the guides are recruited from the universities of near-by States the dependable quality of the information given is assured.

This service has proven intensely popular in Yosemite Park. In the Yellowstone personally conducted trips across the geyser formations always draw an enthusiastic following. Anyone who sees the interest displayed by the questions asked and the quiet attention given to the words of the lecturer can not fail to acknowledge the real value of this unique service. In the evening these guides make regularly scheduled lecture tours to various points in each park. The lectures are attended by hundreds who keep the guides busy after their talks answering questions on the subjects treated. In Glacier, Mount Rainier, and Rocky Mountain Parks the work of the nature-guide service was well conducted and proved exceptionally popular with visitors. In the Mesa Verde it has long been necessary, because of the seemingly inevitable vandalism that resulted in the marking of the walls of rooms and the pilfering of the ancient relics of the cliff dwellers, to insist that the visitors be accompanied by a competent guide, and as a result the visitors to that park do not leave before they have learned much of the life and history of the

ancient inhabitants. In the evenings regularly conducted talks around a blazing camp fire by the superintendent or some visiting scientist add to the distribution of information and the entertainment of guests.

At the Casa Grande National Monument the visitor is taken on a personally conducted tour of the ruin by the custodian, who explains the life and history of the old inhabitants as indicated by the Great House itself and the artifacts found in the land adjacent to the ruin.

I should like to see this nature-guide service extended to every national park and several national monuments as soon as practicable.

### OUR PARK WILD LIFE AND ITS PROTECTION

All the national parks are absolute sanctuaries for wild animals except a few species of predatory ones which are annually reduced by the ranger forces on patrol. Every effort has been made during the past year to improve the condition of the animals, and in general they have done unusually well.

That the welfare of our native wild life is being seriously considered by various States is evidenced by the establishment of many State game refuges for breeding purposes and particularly the recognition that has been given to this important phase of conservation by some of the States within which the national parks lie, in the establishment of game preserves to assist in the protection of park animals such as elk and deer, when strenuous winters force these animals from the high altitudes of the parks into lower areas outside where they would become the ready victims of hunters. There is a natural overflow of game from the parks into outlying territory as this game in the park area becomes abundant. This is to be expected, and is one of the important factors wherein the national parks contribute economically to the surrounding territory. It is, however, when winter storms causing shortage of feed drive elk in great numbers outside the park boundaries, thereby giving opportunities for slaughter of almost entire herds, that such State game refuges contribute their important share in preserving the nucleus herds. The Yellowstone illustrates perhaps to the best advantage the results that may be obtained from complete game conservation. The buffalo and elk, the antelope, deer, and bear are steadily increasing and only extremely unfavorable winter conditions or uncontrollable epidemic diseases are likely to check their progress. Some fear is felt at this writing, however, that due to the serious drought that has existed this past season, thereby causing serious shortage of feed, we may encounter difficulties in maintaining our Yellowstone herds through the winter.

### WILD LIFE PROTECTION IN MCKINLEY PARK STILL A PROBLEM

Mount McKinley National Park continues to present a real difficulty in game conservation since it has been impracticable, with the small funds we have for its administration and protection, to prevent much of the unlawful killing that is going on there, principally of the sheep. In my report of last year I referred to the provision in the law creating the park that permitted bona fide prospectors



and miners to kill sufficient game for their actual needs. This privilege has been abused, and unless the residents of that section can be appealed to for a fuller observance of the law there is no satisfactory solution except by amendment of the organic act creating that park so as to provide complete game protection, as is done in the other parks.

#### RESTOCKING WITH NATIVE SPECIES FAVORED

While all the national parks are naturally stocked, we have in a few instances, with the concurrence of the Biological Survey of the Department of Agriculture, favored the introduction of a few non-exotic species. A few years back a number of elk from Yellowstone National Park were liberated in Glacier Park, and while we have been unable to prevent the killing by Blackfeet Indians of many on the east side that seek the lower altitude on the adjoining reservation during the period of heavy snows and severe weather, there has been nevertheless a gradual increase noted. In Yosemite National Park the small herd of valley elk introduced there several years ago with the cooperation of the California Academy of Sciences is growing steadily. This fall the experiment of introducing a small band of antelope in the Grand Canyon, its former native habitat, will be tried with the assistance of the Biological Survey, funds for the undertaking having been subscribed by private parties interested in the protection and propagation of the antelope.

#### ATTRACTIVENESS OF WILD LIFE A STIMULATION TO CONSERVATION

The important relationship that the national parks bear to the conservation of the wild life of the country has not been fully appreciated until lately. Aside from the economic value of native animals, which may be considered in their distribution to the other parts of the country for restocking purposes, their biggest value perhaps is their attractiveness in their natural environment to park visitors, thus stimulating as nothing else can a desire for game protection and conservation.

#### PARK ROAD PLANS

The Congress by the authorization act approved April 9, 1924, providing for a three-year program of road construction in the national parks and authorizing appropriations of \$2,500,000 annually for the three-year period, gave immediate and definite recognition to the great need for road improvement in the national parks when called to its attention by your request for the passage of appropriate legislation to enable such improvement. Your request was approved by the President through the Bureau of the Budget which gave every aid in presenting this matter to the Congress. After hearings before the Committee on Public Lands of the House of Representatives during which the road situation was fully detailed and plans for road improvement in each park were presented, the committee unanimously reported the bill to the committee of the whole House with the recommendation that it pass. Placed on the unanimous consent calendar of the House it was passed unanimously on March 18. The Senate Public Lands Committee unanimously reported the bill to the

Senate and it passed that body unanimously on April 3. This legislative record clearly reflected the will of the people in demanding that the roads in the national parks be placed in a good and safe condition for motor travel.

After approval of the authorization act you submitted to the Bureau of the Budget a supplemental estimate of \$2,500,000 covering the first instalment of the road budget funds, but demands on the Treasury due to the passage of the adjusted soldiers compensation act resulted in the President approving an estimate to be submitted to Congress for only a million dollars. In the hearings before the House Appropriation Committee it was brought out by members of the committee that the first million dollars would take care of about all the road work that could be accomplished between June and December of this year and that the second instalment of \$2,500,000 of the road funds would be made available by March 1 next to cover construction work between that time and July 1, 1926. In view of the second instalment of funds being made immediately available, because of the peculiar situation in the national parks with regard to a short construction season, the House committee expressed the opinion that the appropriation of \$1,000,000 as approved by the President, together with assurances that the additional money would be available early in the spring, was a substantial compliance with the spirit of the authorization act. It also was the opinion of the House committee that no new construction should be undertaken with the first appropriation of a million dollars but that this should be devoted solely to the reconstruction of existing park roads to place them as rapidly as possible in a safe and traversable condition.

#### WORK CAN BE HANDLED BY OUR ENGINEERING FORCES

Unfortunately the second deficiency bill carrying this million of road funds failed of passage in the closing hours of the first session and all plans for immediate action had to be postponed. We were enabled, however, to keep our skeleton engineering forces, which will be expanded to take care of the larger program, busy on specific road construction, for which funds were included in the regular Interior Department appropriation act in advance of the passage of the park road authorization act.

While this million dollars will probably be made available on the passage of the pending deficiency bill when Congress meets in December, the present working season has been lost. Careful planning ahead by the engineering forces leads me to state with conviction that we will be able to handle this increased work next year, and in the Hot Springs, Arkansas, and Platt, Oklahoma, parks the contemplated road work can be pushed through to completion this winter.

#### ROADS WILL OPEN UNDEVELOPED PARKS

While the road program calls for reconstruction of much of the existing roadway, considerable new construction will be undertaken to open parks in which to date the Federal Government has not authorized any road work. Such parks for instance as Mount McKinley, Alaska, Hawaii in the territory of Hawaii, and Lassen Volcanic, California, have never had any road development and



until roads are constructed the park areas can not be developed for motor travel. Especially are motorists demanding access into Lassen Volcanic Park. Tourist travel to Alaska and over the Government-owned Alaska Railroad will be greatly stimulated by the construction of a road into Mount McKinley Park to permit visitors to see at close hand the herds of caribou and mountain sheep and magnificent scenery of the region.

#### IMPORTANT THAT ROAD PROGRAM BE PUSHED

The park road budget as outlined to the Congress in the presentation of the authorization bill is without question the most important constructive program in connection with the development of the national parks and placing the national park system on a self supporting basis, and I can not too strongly urge that the authorization act be followed as closely as possible in requesting appropriations to put the road work under full speed at the earliest possible date. The motorists are annually contributing substantial returns to the Government for the use of the highways and other facilities provided for camping out and they are entitled to the utmost consideration and return in the way of good roads that the condition of the Federal Treasury warrants.

#### A MODEST BUDGET

Returns to the Government for the period 1917 to 1924 from automobile license fees alone have amounted to \$1,814,779.50. In 1917 the revenue from this source was \$90,969 while in 1924 the automobile license fees totaled \$426,908.50. During the same period, 1917-1924, Congressional appropriations for new road construction in the national parks amounted to only \$1,443,600. Total appropriations and authorizations for national forest roads covering fiscal years 1917 to 1926 amount to \$52,000,000 and for the fiscal years 1917 to 1925, \$540,000,000 has been appropriated or authorized for Federal aid to State roads. The park road budget authorizing \$7,500,000 to be expended over a three-year period is, comparatively, a modest program.

#### SOME PARK APPROACH ROADS ENTITLED TO LARGER FEDERAL AID

In this connection the question of a greater proportion of Federal aid toward the construction and improvement of some of the approach roads to national parks also has been given by the Congress and a measure to accomplish this purpose is now pending, having been introduced by Congressman Colton, of Utah. This measure has been indorsed by a number of western organizations interested in good roads. While over \$23,000,000 has been spent on national park approach roads in 14 States since 1915, in several of the big public-land States with little-populated sections, it is impossible to expect them to build modern highways through such sections without a greater proportion of Federal aid. To attempt to do so would throw them into bankruptcy. To enable these States to construct adequate approach roads to the national parks, used primarily by tourists to these parks from all parts of the United States, a larger degree of Federal aid must be extended in their construction.

In considering our own plans for park road development we now have 1,060.5 miles of roads. It is proposed to reconstruct 391.5 miles by widening, reduction of grade, and putting in a base that will be permanent and permit paving or some other hard surfacing when such construction shall become necessary or desirable. It is proposed under the present program to surface 353.6 miles of road, most of which will be with crushed rock or gravel. It is proposed to build 360.85 miles of new road, much of which will be built through solid rock that will at once form a good base for future paving. The first estimated amount of \$7,500,000 for the three-year program will probably not be sufficient to construct as high-type roads as it is planned to build in the parks, yet every dollar will be put in permanent development so when paving is necessary in the future not one dollar will have been wasted.

#### PARKS NOT TO BE GRIDIRONED WITH ROADS

It is not the plan to have the parks gridironed with roads, but in each it is desired to make a good sensible road system so that visitors may have a good chance to enjoy them. At the same time large sections of each park will be kept in a natural wilderness state without piercing feeder roads and will be accessible only by trails by the horseback rider and the hiker. All this has been carefully considered in laying out our road program. Particular attention also will be given to laying out the roads themselves so that they will disturb as little as possible the vegetation, forests, and rocky hillsides through which they are built. In this work the landscape engineering division cooperates closely with the civil engineering forces, and the latter also by separate instruction have been ordered to exercise the greatest care in the protection of the landscape in all road construction work. Especially fine work along this line has been accomplished in Yellowstone, Lafayette, and Sequoia National Parks.

In concluding this discussion of the parks' vital need for roads it should be remembered that park and monument travel has increased from about 200,000 persons a year in 1914 to over 1,600,000 persons in the season just closed. By the time this road program can be completed there will probably be double that number going through the parks and easily 500,000 automobiles. The road situation in the parks thus presents a serious problem, the only solution of which is to get the improvements under way at the earliest possible date and push them to completion as fast as it is possible.

#### NEW NATIONAL PARKS

While no new national parks were actually added to the system, the creation of the Utah National Park was provided for in legislation enacted by the Sixty-eighth Congress in the closing hours of the first session and approved by the President on June 7, 1924. The area to be thus set aside includes the famous Bryce Canyon in southwestern Utah, a box canyon 2 miles wide by 3 miles long cut 1,000 feet into the top of Paunsaugunt Plateau. It drains toward the southeast and overlooks the Colorado River, 75 miles distant.

Bryce Canyon is now included within the Bryce Canyon National Monument, which is administered by the Department of Agricul-



ture, but the act elevating it to national park status provides that before the new designation shall become effective all the lands within the exterior boundaries must first become the property of the United States. There are 640 acres of land in the park area owned by the State and the Union Pacific Railroad. Provision is made in the act for the exchange of alienated lands in both this and Zion National Park, Utah, for unappropriated and unreserved public lands of equal value and approximately equal area outside of these parks in the State of Utah. Negotiations have been opened with the railroad and the State for the transfer of their holdings to the Federal Government, but the Union Pacific Railroad has not shown a disposition to give up its holdings, which is the key location to future development of the area.

### NEW NATIONAL MONUMENTS ESTABLISHED

Two new national monuments were established by Presidential proclamation and placed under the administration of the Department of the Interior, increasing the number of monuments so administered to 30.

#### CARLSBAD CAVE, N. MEX.

The Carlsbad Cave National Monument in New Mexico was established October 25, 1923. The monument is located in the Guadalupe Mountains in southeastern New Mexico, 25 miles southwest of Carlsbad. The waters have dug out at least half a dozen large caverns by dissolving the thick beds of gypsum and rock salt imbedded in the shale.

Although it has been explored for several miles underground, there are still many portions of Carlsbad Cave yet unexplored, and its size is a matter of conjecture, although the National Geographic Society now has an expedition at the cavern making detailed explorations. The area of the present monument is 719.22 acres, but investigations are now under way to determine the advisability of increasing its size. Pending the result of these investigations 82,710 acres of public land surrounding the monument have been withdrawn from entry and settlement by Executive order dated April 2, 1924.

The cave is open to the public at present only under the guidance of its original discoverer, who has been given a guide permit by the Government. The only means of entrance is through a hole in the roof, through which one is lowered 200 feet in a bucket. The cavern, of course, is in darkness, with many steep drops from one level to another, and slippery declivities. An appropriation of \$5,000 was carried in the Interior Department appropriation act for 1925 for the purpose of driving a tunnel into one of the inner chambers of the cavern so that access on an easy grade might be afforded visitors, but recent investigations developed the fact that such a tunnel would cost about \$18,000.

#### CRATERS OF THE MOON, IDAHO

In the semiarid portion of the Snake River Plateau in south central Idaho, at the foot of the White Kamb Mountains, lies the newest national monument, the Craters of the Moon, which was

created May 2, 1924. It is a volcanic region, the most recent example of fissure eruption in the United States and, as its name signifies, closely resembles the surface of the moon as seen through a telescope. Nowhere else in the United States can so many volcanic features be found in such a small area. The monument contains approximately 39 square miles.

#### CHANGES IN BOUNDARY OF EXISTING NATIONAL MONUMENTS

The area of the Scotts Bluff National Monument, Nebraska, was reduced by Executive order of May 9, 1924, by the elimination of 160 acres. This quarter section was classed as irrigable land under the North Platte Federal Irrigation Project and was eliminated for that reason. The area of the monument is now 1,893.83 acres.

The area of the Pinnacles National Monument in California was increased by a third Presidential proclamation dated July 2, 1924. This added 320 acres, making the total area of the monument 2,980.26 acres.

In connection with plans to restore to the public domain certain areas of the Gran Quivira and Chaco Canyon National Monuments in New Mexico, the service was advised there was no statutory authority for the President to restore monument lands to entry, and in view of the opinion of the Attorney General dated March 29, 1921 (32 Opn. Atty. Gen. 488), it appears that such restoration is unauthorized. It therefore appears that national monuments are fixed reservations subject to restoration to the public domain only by legislative act.

#### THE NATIONAL CONFERENCE ON STATE PARKS

The State park movement, inaugurated by the Department of the Interior in 1921, is developing into one of the most popular and useful enterprises of the present generation. The First National Conference on State Parks was held in Des Moines, Iowa, and its results have been far-reaching. The second conference was held in the Bear Mountain Inn, Palisades Interstate Park, New York, in May, 1922; the third conference at Turkey Run State Park, Indiana, in May, 1923; while the fourth met at historic Gettysburg in Pennsylvania, last May. The increase in interest in State parks was marked, a larger number of States being represented at each meeting. Besides members of Congress and representatives of several Federal bureaus, the conference was attended by official delegates of the governors of the States, many well-known conservationists, members of State park and forest boards, conservation commissions, scientists, and educators. The governors of all but three States appointed delegates to the conference.

#### ACCOMPLISHMENTS SINCE THE THIRD CONFERENCE

As an illustration of what has been accomplished in this field since the third conference, Arkansas, Nebraska, and Missouri have created State parks; the Save-the-Redwoods League is working on a plan for a broad-gauge development of the State parks of California; the bill for the creation of the State park commission in Kentucky



passed both houses of the legislature and was signed by the governor within 10 days from the date of its introduction; West Virginia and Texas have State park associations; Virginia is preparing to reintroduce in the next legislature her bill for a State park commission and is planning a large meeting to crystallize sentiment in favor of the movement; several other States, Georgia, Alabama, and Tennessee, for instance, are taking an active interest in the beginning of State park work, while the governors of Nevada, Maine, and Mississippi have shown definite interest in the movement. In New York the legislature passed a bill for a bond issue of \$15,000,000 for increasing and improving State parks, and created a State council on parks. The voters of the State will have an opportunity at the November election to approve this bond issue, which will enable the State to make vast improvements in her State park system and will bring to the people greater opportunities for outdoor recreation.

That the States which have no State parks are realizing the value of these areas to their communities was clearly shown when Governor Neff, of Texas, devoted his entire address before the annual convention of the State Bankers Association to this question. Among other things he said:

Regardless of whether other States need parks or not, the time has come in Texas when some one, somewhere, in some manner or another, must start a movement looking to the creation and development of a system of State parks in order that our citizenship may grow along symmetrical lines rather than one sided, due to the predominance of commercialism and industry.

As a result of Governor Neff's preaching parks 42 beauty spots of every size and description have been set aside as State parks. This State that a short time ago had no parks is now taking its place as a leader in the State park movement.

#### THE PARK-TO-PARK HIGHWAY CONVENTION

On August 21 and 22, 1924, the annual convention of the National Park-to-Park Highway Association was held in Great Falls, Mont. I attended the sessions of the convention and had with me the superintendents of Yellowstone and Glacier National Parks.

Reports from all Western States through which the Park-to-Park Highway runs were read to the convention, and I was surprised and pleased to hear that an enormous amount of improvement work had been done on this highway during the past year.

It was very apparent that it will only be a question of a few years until this great interpark highway will be in splendid condition throughout its entire length. The suggestion was made that the Park-to-Park Highway is really a national institution at the present time, and is everywhere coming to be regarded as such. Federal funds are being expended on it in huge amounts, and the touring public from all sections of the Nation are using the interpark system in ever-increasing numbers, thus giving it a national status from more than one point of view.

#### BROOKLYN EAGLE NATIONAL PARK DEVELOPMENT TOUR

The National Park Service has come to look upon the Brooklyn Eagle National Park Tour as an annual event in national park

affairs; five of these tours having taken place during the last six years. During 1924 the Eagle's trip included a visit to the Grand Canyon, where the new drive to Tuba City was formally dedicated; to Yosemite National Park, where a tablet was placed on the Tioga Road to commemorate the acquisition and donation of this road to the Government by private individuals, and to the Mesa Verde National Park as well as to the Mammoth Cave in Kentucky, which has been proposed for acquisition for national park purposes. The superintendents of all these parks were enthusiastic over the visit of the Brooklyn Eagle party, as the "Eaglets" are true park friends and enthusiasts. I am hoping that these tours may become an annual event and that every park and monument in the system may eventually be visited.

#### **DIRECTOR OF PARK SERVICE NOW CONNECTED WITH NATIONAL CAPITAL PARK DEVELOPMENT**

This past session of Congress saw another duty added to those involved in the directorship of the national parks, namely, membership in the new National Capital Park Commission having to do with the enlargement and development of the park system of the District of Columbia. The act approved June 6, 1924, in creating this new commission, prescribed that the Chief of Engineers of the Army, the Engineer Commissioner for the District, the Director of the National Park Service, the Chief of the Forest Service, the Officer in Charge of Public Buildings and Grounds, and the Chairmen of the Senate and House Committees on the District of Columbia shall constitute its membership. The commission, or a majority thereof, is authorized and directed to acquire such land as in its judgment is necessary and desirable in the District of Columbia and adjacent areas in Maryland and Virginia, within the limits of the appropriations made for such purposes, for suitable development of the national capital park, parkway, and playground system, the land to be acquired either by purchase or condemnation proceedings. An annual appropriation for park extension in and about Washington of not to exceed 1 cent for each inhabitant of continental United States is authorized, and this would now total something over \$1,000,000.

The commission has had its organization meeting, and is already at work on the development of plans as contemplated by the organic legislation. This legislation has added some obligations which it will take additional time and effort to dispose of, but opens up opportunities for participating effectively in national park work of another sort than is involved in the administration and development of the national parks themselves; work that is intensely interesting and important since it involves the harmonious development of the National Capital, the seat of the American Government.

#### **WORKING CONDITIONS OF PARK EMPLOYEES GREATLY IMPROVED**

In recent years special attention has been given to the providing of such conveniences as would add to the comfort and contentment of park employees, especially toward supplying the married employees with suitable housing facilities, including light, heat, water,



and sanitation. While we have not received funds from Congress for all the improvements we considered necessary, nevertheless a fine start has been made, notable improvements being in the headquarters village of Glacier at Belton and the new headquarters in Sequoia at Alder Creek. It will probably require several years to improve working conditions in all the national parks to which park employees are justly entitled.

Another step ahead has been the installation of medical and hospital services in some of the larger parks, such as Yosemite and Yellowstone, and more recently in the Grand Canyon. These services should be extended to some of the other parks where our employees are now without medical attention except for such as may be secured in cities or towns many miles distant.

The enactment of the reclassification act has made park work financially more attractive for our field forces, as well as for those in the Washington office, and with opportunities for advancement there is now inducement for many employees to make their park work their career. Improved working conditions also redound to the benefit of the Government in keeping competent, loyal, and well-trained men and women on the job.

#### FIELD ACCOUNTING NECESSARY IN THE CONTROL OF PARK UTILITIES

The appropriation act for the Interior Department for the fiscal year 1923 carried an item of \$6,000 for accounting services in verifying and checking the accounts of the public utilities operating in the national parks under strict Government control. The same amount was appropriated for the fiscal year 1924. Mr. Francis P. Farquhar, of San Francisco, was appointed on October 10, 1922, as special field accountant on a temporary basis, and his appointment has been extended from time to time as need for his services arose. During the past two years extensive examinations have been made for the accounts and operations of the Yellowstone and Yosemite National Park utilities, and also of the Hot Springs, Glacier, Crater Lake, and Sequoia operations. In connection with the examination of these accounts this special accountant has been able to make suggestions for clearer definitions in the clauses of the contracts, referring to franchise payments to the Government, and considerable progress has been made toward establishing general uniformity of accounts among the operators. As a result of these examinations the way has been prepared for establishing certain principles of regulation that can be more fully developed in the future. The reports of the companies have been interpreted in the light of general business practice and the National Park Service is now in a better position to enforce requirements involving capital expenditures by the operators and to regulate rates which will inevitably result in better service to the public. Any Federal organization having the control of public utilities, such as the National Park Service has, finds the employment of such supervisory accounting service indispensable. The granting of this small appropriation by Congress has more than paid for itself in many ways, entirely aside from the fact that the entire appropriation has been more than made up by the exaction of larger revenues from the operators which could be established as being rightfully due the United States.



## GRAZING RAID ON CALIFORNIA PARKS DEFEATED

This year's drought in California resulted in determined and persistent efforts by the State associations of cattle and sheepmen to open large areas of Yosemite and Sequoia National Parks to the grazing of both cattle and sheep. Complicated with this situation was the possibility of the spreading into the parks of the foot-and-mouth disease, then rampant in various sections of the State. For a time this situation threatened to add greatly to the difficulties of normal park administration, with the incidental danger to the wild life in these parks. Due to your strong stand against opening up these parks to grazing, based first upon careful investigations made by Park Service officials, ably assisted by Forest Service officials and others, that indicated these efforts were being made upon ill-advised and unfounded hysterical suppositions that a more serious grazing emergency existed than actually did, and, second, upon the principle that, conceding such an emergency, all private and national forest areas should first be utilized, the demand for opening the parks to grazing was denied.

## THE PARKS IN WINTER

I have been endeavoring gradually to encourage a larger winter use of some of the parks, furthering their use for winter sports, and am gratified that last winter showed a record use for this purpose. Of course the Grand Canyon, Hawaii, Hot Springs, and Platt National Parks, because of their temperate climates, are accessible to visitors, and as popular in the winter as in the summer. People have begun to realize the opportunities afforded for enjoying winter sports under ideal conditions in superb scenic settings, and this realization has resulted in a satisfying increase in winter travel in the snow-covered parks.

Yosemite Valley, protected by its granite walls, has two distinct winter climates on opposite sides of the valley, so that snow and ice are available for skating, sleighing, tobogganing, and other winter sports on one side, while on the other the temperature is mild. Motoring and horseback riding can also be indulged in although to somewhat restricted extent. As the snowfall was unusually light last year, winter sports suffered somewhat in the valley.

The use of Rocky Mountain National Park for winter sports received a new impetus this past year from the organization of the Colorado Ski Club, to promote every form of outdoor sports and develop a definite winter season in the Rocky Mountain Park region. A Swiss ski instructor was employed by this club to give free instructions. The ninth annual outing of the Colorado Mountain Club took place in March, as did the first annual ski tournament of the newly organized Ski Club. Over 2,000 people visited the park during March either to participate in or witness these events. A new ski trail was constructed in the park through the combined efforts of the Colorado Mountain Club and the National Park Service.

The inauguration of the winter season in Mount Rainier National Park on December 15 of last year proved of tremendous popularity. For the first time in the history of the park the road to Longmire

Springs was kept open by means of a snowplow attachment operated ahead of a caterpillar tractor. This was done at very slight expense. Park travel became so heavy that the hotel accommodations were taxed to the utmost and during the four months from December 1 to March 31, 9,553 people visited Longmire Springs. Plans are being made to increase the hotel accommodations for this next winter season, as well as to install more equipment for snow sports and other amusements for visitors. The Mountaineers of the State of Washington held their eleventh annual outing in Paradise Valley during the Christmas holidays, reporting an unusually successful meet, and several other organizations also held outings in the park. It is believed that with this remarkably encouraging start, Mount Rainier National Park will become one of the great winter resorts on the Pacific coast.

Sequoia and General Grant Parks also appear on the list of parks open for winter sports. Tobogganing, skiing, and hiking were supplemented last winter by the building of a huge ice palace and snow fortifications. During the month of February alone over 1,000 people enjoyed the winter sports in General Grant Park.

Lafayette National Park annually affords a variety of cold-weather sports to the visitor, including snowshoeing, skiing, tobogganing, skating, and ice-boating, and judging by the enthusiasm with which these opportunities are seized, the park will prove more popular to devotees of these sports as each year passes.

#### ARCHEOLOGICAL EXPLORATIONS AND RESTORATION OF RUINS

This year Congress appropriated the sum of \$5,000 for general repairs to existing ruins and work is going forward with these funds at Casa Grande, Tumacacori, Montezuma Castle, Gran Quivira, Chaco Canyon, and Aztec Ruin Monuments under the personal supervision of the Superintendent of Southwestern Monuments, Frank Pinkley. If this progressive program of repair is carried forward a few years most of the existing monument ruins can be placed in condition to withstand the elements for many years, thus saving them for posterity.

In the Mesa Verde National Park for a number of years a few thousand dollars have annually been put into excavation work conducted under the supervision and control of the Smithsonian Institution. This past year, however, in order to do some much-needed repair work, the small amount of funds we had was devoted to repairing and protecting some of the prehistoric ruins, already excavated, and no new excavation work was undertaken. It may be necessary to follow this policy for a number of years until our superintendent, himself a competent and trained archeologist, is satisfied that existing excavated and repaired material is not in danger of collapse or disintegration.

In the Chaco Canyon National Monument the National Geographic Society's expedition, under the direction of Neil M. Judd of the United States National Museum put in its fourth year of exploration work on the Pueblo Bonito and Pueblo Arroyo ruins. Pueblo Bonito is considered one of the most important and instructive prehistoric ruins in the Southwest, and the National Geographic



Society is to be commended for making it accessible for study and inspection by the public generally.

#### GIFTS TO THE NATIONAL PARK AND MONUMENT SYSTEM

Each year I have had the pleasure of reporting to you generous gifts from park friends, and this year is no exception.

Three deeds giving the United States title to tracts of land, totaling 358 acres, donated through Superintendent Dorr for inclusion in Lafayette National Park have been accepted by the department. In addition, donations of money for road and trail building purposes have also been received.

The city of Medford offered the United States two lots, tax free, for use as sites for a residence for the superintendent of Crater Lake National Park with attached office, for a warehouse for the storage of park equipment, and other structures. Just before adjourning Congress passed an act approving the acceptance of these lots by the Government.

Congress, in the Interior Department appropriation act for this year, also authorized the United States to accept a tract of land offered by the city of Hot Springs for use as a camp site in connection with the administration of the Hot Springs National Park.

Through the efforts of the American Association of Museums the Laura Spelman Rockefeller Memorial became interested in the development of museums in the national parks and appropriated \$70,500 for the construction, equipment, and maintenance for three years of a museum in Yosemite National Park. This project is discussed in detail on page 8.

Mrs. Stella M. Leviston, who two years ago gave \$3,000 for the construction of one wing of a museum in Mesa Verde National Park, this year added another \$2,000 to provide for the completion of the wing. Another gift of \$3,500 toward the completion of the museum, installation of cases, and other improvements has been offered the park superintendent.

The administrative and inspection work of Frank Pinkley, Superintendent of Southwestern Monuments, requires a great deal of travel, which he has been doing in a Ford truck, having covered over 50,000 miles in six years. The monument funds have been so limited that the expense of a new car could not be met, so I interested several friends in buying a new car for Mr. Pinkley, and with additional contributions from local citizens, was able to purchase a small touring car at a cost of \$1,075.

Myron Hunt, prominent architect of Los Angeles, donated the plans for the new administration building in Yosemite National Park and also a considerable amount of time in supervising its construction.

A donation of \$100 by the Hot Springs Chamber of Commerce enabled the service to get out an edition of 9,500 copies of the Hot Springs Rules and Regulations, which were greatly needed but for which only one-half the amount needed was available from Federal funds.

The Hawaii Tourist Bureau has provided for the printing of an edition of 100,000 copies of the Hawaii Rules and Regulations pamphlets for distribution to the traveling public.



The Yellowstone Park Transportation Co. made available over \$1,300 to cover the cost of printing 40,000 copies of the Yellowstone Rules and Regulations, to be given out to train tourists.

The pamphlet descriptive of camping trips in the Grand Canyon National Park was again made available by the Santa Fe Railway. Forty thousand copies of this pamphlet were issued.

A donation of books for the library at the Grand Canyon was received, and also some scientific publications for addition to the Yosemite collection. The Yosemite also was the recipient of an interesting collection of arrowheads and swords, and Crater Lake National Park received an original painting of a covered wagon crossing the Oregon plains.

All these donations, and the generous spirit that prompted them, are deeply appreciated by the service officials here, as well as by the officials of the parks and monuments directly benefited.

### PRESERVATION OF PARK FORESTS

The summer of 1924 presented one of the most serious forest-fire hazards in the West that has occurred for some years past, but fortunately the national parks came through practically unscathed. Apprehension began early in the spring, when a most unusual dry spell developed generally throughout the West and extended to the Pacific coast. It became evident then that only the most intense vigilance would prevent a calamity to our park forests. As the season opened with an inrush of visitors and no improvement in weather conditions, the situation became critical. Serious conflagrations outside the parks were reported with alarming frequency, and in several instances there seemed to be no hope of preventing their taking toll in the parks. One devastating fire burned to within a mile of the El Portal entrance of Yosemite Park before it was brought under control. On another occasion only the most heroic efforts on the part of fire fighters saved General Grant Park from destruction. A number of small fires elsewhere kept our forces on the move throughout the season, but fortunately timeliness in locating them prevented their spread to serious proportions. All fires are small at the start, and alertness in locating them and speed in reaching them are the chief factors in holding them in check. No small credit, however, should be given to the visiting public, which cooperated splendidly in observing our fire regulations and reduced the dangers of fire to the minimum. In fact, educating the public to the dangers resulting from careless handling of fires has been a contributing factor in our success. It is to this understanding by the public that we attribute the reduction of fires in the Yellowstone from 324 in one year to 19 the next year.

### CANADIAN PARKS HAVE HIGHLY EFFICIENT FIRE-FIGHTING EQUIPMENT

During my visit to four of the Canadian national parks this summer I was much impressed with the efficient fire-fighting facilities available there. A remarkable series of high-power portable pumps has been developed which deliver four powerful streams of water through 1½-inch linen hose 500 feet from pump to nozzle; or one stream 3,000 feet on a level or 300 feet up a mountainside.

The use of canvas reservoirs and relays in connection with these pumps enables delivering water to forest fires high up in the mountains or great distances from the source of water, and their extreme compactness and lightness of the outfit make transportation easy either by auto or by pack train. Similar equipment should be made available for fighting fires in our national parks. In enabling the park forces easily to reach and control fires with this equipment before they gain much headway and in putting out ground fires which, burning deep, destroy the seeds of second growth timber that would soon obliterate the fire scar, thousands of dollars would be saved in actual fire-fighting expenses, while the saving of the forest growth would be incalculable.

Although the national parks suffered but little physical damage, they could not escape entirely from the effects of the public's apprehension brought about by exaggerated reports of actual conditions and of the closing of some adjacent national forest areas to tourists, and as a result travel in some, particularly Yosemite, fell off materially.

#### SERIOUS INSECT INFESTATIONS MUST BE COMBATED

While the forests escaped serious damage from fire, they were subject, on the other hand, to the increasing menace from insect attack. I referred to this danger in my last report, and while further investigations were made during the past season and some control measures adopted, results obtained thus far indicate only partial success. Attacks on some of the timber in Yellowstone Park by the spruce budworm and lodgepole sawfly have become especially acute. To combat these depredations a high-powered sprayer was shipped to the park from the East and used during the summer. This method is apparently effective, but its use is limited to the timber along the roads. In the Yellowstone some 300 square miles of timber on the west side of the park were found badly infested, while reports from Crater Lake National Park indicate 30 square miles of lodgepole pine killed by infestation. Every effort is being made by the service to protect the forests under its jurisdiction, and it is constantly receiving assistance and counsel from the United States Bureau of Entomology, and also from entomologists outside of the Government. Increased appropriations for this important work will render effective aid. Our experiences indicate that insect infestations are far more destructive than the fires we have to combat and therefore should be fought as strenuously as any fire.

#### CLEANING UP DEAD AND DOWN TIMBER AN IMPORTANT PROTECTIVE MEASURE

Another measure of forest protection which should be inaugurated at the earliest practicable date is that of cleaning up the dead and down timber and improving roadside conditions in the parks. Not only would the beauty of the woods and the scenery be enormously improved, but from a practical standpoint the cost of removing these serious fire hazard conditions from the invaluable park forests would be justified. Work of this character could be carried on in the fall when there is not much travel on the roads where the débris could be hauled and burned. The winter snows would restore the natural conditions so that by spring all evidence of disturbance of natural conditions involved in the clean-up would be gone.





Photograph © by K. Maehara

A. SPECTACULAR ERUPTION OF KILAUEA VOLCANO, MAY, 1924

Smoke and ashes forming column 2 miles high



B. BOMBARDED AREA 2,000 FEET FROM RIM OF CRATER, KILAUEA VOLCANO

The holes in the foreground were made by bombs hurled from the pit

HAWAII NATIONAL PARK





Photograph by W. J. Cribbs

A. WEST YELLOWSTONE GATEWAY AND RANGER STATION BUILT BY PARK RANGERS, MAY, 1924



Photograph © by J. E. Haynes

B. THE NEW SYLVAN PASS LODGE ON THE CODY ROAD  
YELLOWSTONE NATIONAL PARK



A. PARTY OF STUDENTS FROM THE SUMMER SCHOOL OF UTAH AGRICULTURAL COLLEGE AT THE FIRE LOOKOUT ON MOUNT WASHBURN



B. DEER AT MAMMOTH HOT SPRINGS, WHERE A SMALL ZOO IS BEING STARTED FOR INSPECTION BY VISITORS WHO FAIL TO SEE THE WILD ANIMALS ALONG THE PARK ROADS

YELLOWSTONE NATIONAL PARK

Photographs by W. J. Cribbs





Photograph by C. J. Wilcox

A. DEER FEEDING NEAR PARK HEADQUARTERS AT BELTON



Photograph by C. J. Kraebel

B. UPPER KINTLA LAKE AND MOUNT GARDNER, ACCESSIBLE BY THE  
NEW BROWNS PASS-KINTLA TRAIL  
GLACIER NATIONAL PARK



## FLOOD DAMAGE TO ROADS AND TRAILS

Not infrequently the parks are visited by flood as well as fire, leaving a trail of destruction to roads and bridges and increasing our problems of administration, especially if during a period of heavy travel. Experience has shown that while devastating cloudbursts are not likely to occur in a season when forest fires are serious, there is the ever-constant danger from one or the other, depending on the vagaries of the elements. Yellowstone, Mount Rainier, Rocky Mountain, and Mesa Verde were especially hard hit the past year, complicating their administration by temporary forced diversion of funds until Congress could, by deficiency, replenish the park appropriations.

## SANITATION IN THE PARKS

The United States Public Health Service continued its cooperative work during the year in maintaining satisfactory sanitary conditions in the national parks. The work, under the general supervision of Sanitary Engineer H. B. Hommon, assisted by Associate Sanitary Engineer I. W. Mendelsohn and Assistant Sanitary Engineers L. D. Mars and Arthur P. Miller, covered problems of sanitation in Yellowstone, Yosemite, Grand Canyon, Rocky Mountain, Glacier, Sequoia, General Grant, Mount Rainier, Crater Lake, and Zion National Parks and Bryce Canyon.

I believe there is no better example of cooperation between Government bureaus and departments than this cooperation extended by the United States Public Health Service in order that the sanitation in the parks may be on as high a standard as can possibly be secured to protect the health of the visitors. Any visitor to a national park may be assured that the drinking water is as pure as can possibly be secured; that sewerage and other convenience installations are as sanitary as can be provided for the money available, and that safeguards are thrown around the handling of foods prepared for consumption. There are, of course, places where the incoming flow of visitors makes it important to extend sanitation systems, but this is done as speedily as investigation has disclosed the necessity therefor.

The activities of the Public Health Service in the various parks are recorded in Engineer Hommon's report printed in Appendix C.

## APPROPRIATIONS AND REVENUES

The appropriations for the fiscal year ended June 30, 1924, totaled \$1,822,730 and, in addition, \$29,400.96 was granted in the first deficiency act approved April 2, 1924. Of this amount \$27,700 was for the repair of roads in Yellowstone National Park, caused by the floods and washouts resulting from cloudbursts during July last. The second deficiency act, which failed of passage in the closing hours of the first session of the Sixty-ninth Congress, carried \$1,044,871 for the national parks. One million dollars of this was the first installment of our budget funds authorized to be appropriated by the act of April 9, 1924, approving a three-year road construction program for

the national parks. With the exception of \$2,700 for personal services in the Washington office, the balance of this second deficiency was for repair of damage to roads in Rocky Mountain, Mesa Verde, and Mount Rainier National Parks, caused by storms occurring at about the same time as the Yellowstone storms. In July last year severe cloudbursts visited many sections of the West, causing great loss through damage to highways.

In the appropriations for the current fiscal year, amounting in all to \$1,877,835, the House Committee on Appropriations of its own volition inserted a provision appropriating \$20,000 for "reconstruction, replacement, and repair of roads, trails, bridges, buildings, and other physical improvements in the national parks and national monuments that are damaged or destroyed by flood, fire, storm, or other unavoidable causes during the fiscal year 1925." This provision will be of great benefit in the administration of the national parks and monuments, as damage to physical improvements from unavoidable causes is apt to occur in these areas located for the most part in mountainous country which the elements are eternally striving to wear down. It is a form of insurance protecting the regular park appropriations which can not provide for unforeseen contingencies, and except in unusually bad years should enable the service to replace or repair physical improvements damaged or destroyed without going to Congress for deficiencies.

A similar provision inserted several years ago and since annually carried into the Interior appropriation act providing insurance against forest fires has proved of inestimable value in placing \$20,000 available for fighting forest fires. Since the big fires of 1921 this amount annually has been more than sufficient to replace funds expended in fighting fires. More alert fire patrol, education of park visitors to be careful with fire, and favorable natural conditions have been to a large degree responsible in keeping down the menace of forest fires.

#### PARKS APPROACHING SELF-SUPPORTING BASIS

In a review of appropriations it is interesting to observe that we have worked toward placing the national park system on a self-supporting basis. In the face of considerable and, oftentimes perhaps, just criticism we have exacted a license fee to be paid by visiting motorists for the use of the park roads in those parks in which roads have been constructed by the Federal Government. In return for the fee paid the motorists received more than just the use of the roads, as in most of the parks splendid camp grounds have been developed in which adequate sanitary facilities have been placed and pure water and wood for camp fires made available. Park revenues which are mainly derived from the automobile license fee, although the public utilities in the various parks are required to pay to the Government taxes on their franchises in proportion to the volume of business transacted by these enterprises, have mounted steadily since the creation of the service in 1917. For the fiscal year 1924 the revenues totaled \$663,886.32, an increase of 267 per cent over the revenues derived in 1917.

The parks' need for good roads has elsewhere been commented on at some length, but it is pertinent to say here that the improve-



ment of the roads under the park-road program and the development of new parks where there has been no road construction will undoubtedly greatly increase the revenues so that within two or three years there will be \$700,000 or \$800,000 coming in from automobile license fees alone.

The following table graphically illustrates the increase in the number of visitors and in revenues and of the proportionately small increase in the annual appropriations granted by Congress since the creation of the National Park Service:

Year	Visitors, parks, and monu- ments	Auto- mobiles	Revenues <sup>1</sup>	Appro- priations	Estimates
1917.....	488, 268	54, 692	\$180, 652. 30	\$537, 366. 67	\$1, 105, 083. 01
1918.....	451, 661	53, 966	217, 330. 55	530, 680. 00	1, 008, 318. 20
1919.....	811, 516	97, 721	196, 678. 03	963, 105. 00	1, 058, 619. 00
1920.....	1, 058, 455	128, 074	316, 877. 96	907, 070. 76	789, 380. 00
1921.....	1, 171, 797	175, 825	396, 928. 27	1, 058, 969. 16	2, 345, 867. 50
1922.....	1, 216, 490	197, 105	432, 964. 89	1, 433, 220. 00	2, 488, 004. 50
1923.....	1, 493, 712	271, 482	513, 706. 36	1, 446, 520. 00	1, 566, 080. 00
1924.....	1, 670, 908	315, 916	663, 886. 32	1, 822, 730. 00	1, 777, 950. 00
1925.....				1, 877, 835. 00	1, 753, 250. 00

<sup>1</sup> After July 1, 1918, all revenues except those of Hot Springs were covered into the miscellaneous receipts of the Treasury. Before that time they were available for park development. After July 1, 1922, revenues from Hot Springs are covered into the Treasury and are no longer available for development of the park.

It will be interesting to note that if the revenues accruing to the United States amounting to \$663,886.32 were deducted from the amount of the appropriation for the same period and there is further deducted about \$400,000 expended in permanent improvements, the operating cost during the 1924 fiscal year amounted to a little more than \$758,000, which is the cost to the people of maintaining their national parks. This is an infinitesimal amount when compared with the millions of dollars of travel money that was retained in this country and placed in wide circulation through the manifold attractions of the national parks.

#### SEVENTH NATIONAL PARK CONFERENCE

Each year I am more and more impressed with the necessity of personal contact between field representatives and this office, and the importance of holding annual conferences of superintendents and general officers of the service. The cost of these conferences is more than justified by the results obtained. In a general round-table conference all matters of general policy can be discussed and explained and all questions pertaining to the individual parks thoroughly decided. During such discussions the new superintendents or those in charge of the smaller and less-visited parks can learn much from the more experienced officers, and the Washington officials can impress upon the superintendents the department's point of view on policy matters and the reasons therefor, while at the same time themselves getting the field viewpoint, which is invaluable in running the Washington end of a field service. The result is a smoothly running organization, and particularly the elimination of a great deal of otherwise necessary correspondence and sometimes costly delays.

With your approval I called the Seventh Conference of National Park Superintendents in Yellowstone National Park October 22-28,



1923. This was primarily attended by service officials, although several outsiders who could furnish valuable advice were invited. Through your cooperation, Col. James W. Steese, president of the board of Alaska Road Commissioners, was able to stop at the conference on his way to Alaska from Washington, and contributed much interesting information on Alaskan affairs. The first three days of the conference were devoted to round-table discussions of important problems, while the remaining three full days were devoted to inspections of Yellowstone Park activities, followed by several hours' general discussion on the closing day. The proceedings of the conference, taken down stenographically, have proven an invaluable record for future reference for both the field and Washington offices.

### HEAVY DEMAND FOR PARK LITERATURE

The demand for the Rules and Regulations pamphlets of the national parks giving complete information regarding the parks, how to reach them, and approved charges for all tourist accommodations therein, has exceeded that of previous years and the editions printed have fallen far short of supplying this demand. All travel bureaus, automobile clubs, chambers of commerce, and other interested organizations, to whom we had formerly sent a supply of the pamphlets for redistribution to travelers, were notified at the beginning of this season that this practice would have to be discontinued, but all such agencies were supplied with six copies of each of the various pamphlets for desk use in answering questions from inquirers.

This year the following editions of the Rules and Regulations were printed: Crater Lake National Park, 30,000; Glacier National Park, 30,000; Grand Canyon National Park, 35,000; Hot Springs National Park, 9,500; Sequoia and General Grant National Parks, 25,000; Rocky Mountain National Park, 30,000; Mount Rainier National Park, 25,000; Mesa Verde National Park, 20,000; Wind Cave National Park, 15,000; Yellowstone National Park, 50,000; and Yosemite National Park, 50,000. In addition the Yellowstone Park Transportation Co. donated \$1,329.39 for 40,000 additional copies of the Yellowstone Rules and Regulations, the Medford (Oregon) Chamber of Commerce donated \$177.19 for 5,000 additional copies of the Rules and Regulations, Crater Lake National Park, and the Hot Springs Chamber of Commerce donated \$100 toward the edition of the Hot Springs Rules and Regulations. The Santa Fe Railroad Co. printed and donated the entire edition of the Summer Trips Grand Canyon National Park pamphlet, and the Hawaii Tourist Bureau reprinted and donated an edition of the Hawaii National Park Rules and Regulations. This valuable assistance has made it possible to more fully meet the demand for park literature.

The Manual for Railroad Visitors, Yellowstone National Park, was again issued, 50,100 copies being printed. The Manual for Motorists, Yellowstone National Park, was reissued in different form, being combined with the Motorists Guide map and an edition of 35,000 copies printed. The Motorists Guide for Yosemite National Park was reissued in new form and an edition of 40,000 copies printed. It, together with the Yellowstone Motorists Guide, is the

finest map publication so far issued. The regular Motorists Guide for Rocky Mountain, Glacier, Mount Rainier, Crater Lake, Sequoia, and General Grant Parks were printed. A map guide of the Petrified Forest National Monument was also issued for the first time.

A new mimeograph circular regarding Zion National Park, combining with it descriptive information regarding other scenic points in southwestern Utah and the North Rim of the Grand Canyon National Park, Arizona, was also issued. We have no printed information or mimeograph circulars for Lafayette, Lassen Volcanic, or Platt National Parks, although numerous requests for literature concerning these parks are received annually. For several years we have been holding the manuscripts of the Flora of Glacier National Park, and Birds and Mammals of Mount Rainier National Park, each an important contribution to the literature on those parks and again their publication has had to be deferred on account of lack of funds. Neither has it been possible to issue a large edition of Glimpses of Our National Parks, as had been hoped.

#### INCREASED FUNDS FOR PRINTING

The greatly increased travel to the national parks resulting in tremendously increasing the demand for park literature was given personal consideration by Members of the House Appropriation Committee and the sum of \$25,000 for printing and binding for the National Park Service was definitely set aside in the current act making appropriations for the Interior Department. This is several thousand dollars more than we have had for the past several years for this purpose. Members of the committee expressed approval of the issuance of a large edition of the booklet, Glimpses of Our National Parks, for wide distribution, and the increase was granted with the understanding that this pamphlet would be issued for free distribution. It is also planned to issue for the 1925 season printed pamphlets for Lafayette and Zion National Parks, and if possible to undertake the printing of one of the manuscripts that have been held for publication for some time.

#### SALE PUBLICATIONS POPULAR

Greatly increased sales of special pamphlets sold by the Superintendent of Documents are reported from the park superintendents to visitors in the parks. An increased sale of the topographic maps of the parks is also reported. Supplies of special pamphlets are shipped to the parks by the Superintendent of Documents and supplies of the topographic maps by the Geological Survey. Receipts from the sales are made direct to the Superintendent of Documents and the Geological Survey.

Press releases to the number of 94 were prepared and issued to newspapers, magazines, and organizations and persons especially interested in the national parks, and the publicity resulting therefrom has been very generous and helpful. These press releases included a series devoted to the 30 national monuments under the administration of this service and received much favorable comment. A number of magazine articles were also prepared at the request of editors and published during the year.



## VISUAL EDUCATIONAL WORK

The service again was enabled to offer interested clubs and organizations a lecture by Dr. C. D. Williamson, of Claremont, Calif. Doctor Williamson's lecture covered his "Impressions of Some of Our National Parks" and was beautifully illustrated by lantern slides. Under a cooperative arrangement this lecture was made available without cost to organizations interested. It is estimated that in this way many thousands of persons were personally acquainted with the beauties of the national parks and Doctor Williamson's 18 years of acquaintance with western America, particularly the national parks which he described, gave his talk special interest. It covered Yellowstone, Glacier, Mount Rainier, Yosemite, Rocky Mountain, Mesa Verde, and Grand Canyon National Parks and the Petrified Forest National Monument. It is probable that a similar arrangement will be made this year so that this lecture may be given again during the coming winter season.

Mr. Stephen Johnson, a New York business man and ardent national park enthusiast, who annually takes extended trips into the West, and particularly the southwestern sections, gave a large number of lectures on the Zion and Grand Canyon National Parks, coming to Washington specially on one occasion to give his lecture free to the public in the Interior Department auditorium. Dr. Frank Castler, also of New York City, is another park enthusiast and has prepared remarkably beautiful slides from his own pictures, particularly of the high Sierra of California.

The national parks are being used as subjects more and more by professional lecturers. Mr. Arthur Pillsbury, of Yosemite, toured the East the past winter giving a very fine lecture illustrated by motion pictures of the wild flowers of Yosemite Park folding and unfolding. Mr. F. P. Clatworthy of Estes Park, Colo., also made an extensive tour showing his natural color autochromes of many park scenes, particularly of Rocky Mountain Park. Mr. Branson DeCou, of East Orange, N. J., continued his popular lecture "Dream Pictures of the National Parks" and Mr. Herbert W. Gleason, a professional lecturer of Boston, delivered a number of national park lectures, using colored lantern slides made from his own photographs. Mr. Gleason has devoted considerable time to Lafayette National Park, Me., during the past several years and that park has greatly benefited from his lectures.

A lecture bureau is maintained by the department of tours of the Chicago & North Western Railway and Union Pacific System and is prepared to furnish a lecturer, well informed and well equipped with good views of Yellowstone and Rocky Mountain National Parks, and with a small projector when needed, to interested clubs and organizations. This service is provided without cost and may be had at any time providing the date requested has not already been assigned.

## THE YEAR IN THE PARKS

The following is a summary of work accomplished in the parks and monuments during the past year. The summary is purposely made brief, as very comprehensive reports of the superintendents and custodians have been printed in full in Appendix C.



## YELLOWSTONE NATIONAL PARK, WYO.

From almost all points of view, except weather, the past year in Yellowstone National Park has been a normal one. The work of administration, maintenance, and operation proceeded normally, and with the usual efficiency.

Protection work was somewhat more difficult of successful performance because of the bad fire situation occasioned by the unusual lack of moisture and, as this is written, we fear considerable loss of animal life of the Yellowstone due to the poor condition of the range, especially the feeding areas utilized by elk and antelope in bad winters, the major portion of which lies outside the park. Elk and antelope herds are therefore facing a critical winter and it is possible that partial failure of the hay crop at the Buffalo Ranch, due to the drought of the spring and summer, may result in loss of buffalo, through starvation, or in danger of settlements north of the park, through escape of hungry bison from the control of their keepers and herders.

*Dry summer burns up range and starts fires*

May and June in the Yellowstone, normally wet months when grass and wild flowers grow rapidly and luxuriantly, this year were the driest in recorded history of the park. Records have been kept for nearly 30 years. Fortunately, rains in the early part of July came in time to save the range in the higher altitudes where snow remained through most of the dry period, but below the 6,000 foot contour the range never recovered from the scorching and stunting caused by lack of moisture in the growing period. So much for range conditions affecting animal life.

In the higher altitudes, during July and August, rains came so seldom that the forests became very dry and ready to burst into flame the moment a flash of lightning struck in them. In late August, several electric storms, unaccompanied by rain, started the much feared conflagrations and until well into September the rangers and road crews were occupied in fighting fires that were raging in remote sections of the park. The largest fire was on the Pitchstone Plateau and burned over 2,500 acres of timber. It was necessary to carry several miles, on pack horses and mules, not only food but also drinking water for the fire fighters. This is the only big fire the Yellowstone has suffered since 1919, which was one of the worst fire years in the history of the West.

*Drought also affects road conditions*

Roads in this park for several years have been kept in remarkably good condition, although subjected to very heavy traffic. This year, however, they dried out early in the spring, and it was never possible to get them into entirely satisfactory condition. High winds during the summer swept away most of the top surfacing of fine gravel and lack of funds prevented initiation of regravelling operations on an adequate scale. So the end of the season sees the Yellowstone road system in distinctly poorer condition than it was a year ago. Heavier traffic, of course, must be credited with part of the deterioration of the highways.

*Travel again increases despite adverse conditions*

Elsewhere adverse conditions in the West that were responsible for decreased travel to the parks have been discussed. These conditions also affected travel to the Yellowstone, but in spite of these discouraging influences this big park enjoyed an increase in travel of nearly 5 per cent over its record-breaking number of visitors in 1923, the total travel this year being 144,158, as compared with 138,352 last year. There was a slight decrease in travel by rail, but considerable increase in motorists. The western entrance this year led all other gateways in both rail and automobile travel.

*Yellowstone Park Camps change hands*

It is with great regret that I record the temporary withdrawal from park activity of Mr. Howard H. Hays, the former president of the Yellowstone Park Camps Co. Mr. Hays, early in May, 1924, sold his interests in the Yellowstone permanent camp system because of failing health. He is recovering now and I hope the time is not far distant when he can again enter national park activity with his usual energy and public spirit.

Very few men in America know more of the national parks than Mr. Hays does. He has visited nearly all of them, and is familiar with their problems. There is still a broad field in the national parks for his boundless energy, fine personality, and great activity, and all his friends earnestly hope for a speedy and complete restoration to health.

The Yellowstone permanent camps were sold by Mr. Hays to Mr. Vernon Goodwin, of Los Angeles, who has operated them very efficiently during the past summer.

If Mr. Goodwin recognizes, as I think he does, the necessity for maintaining the personality, spirit, and enthusiasm of the camps personnel, together with its informal entertainments, he will succeed splendidly in his new venture and in all that he undertakes, if along the lines upon which the camps have been conducted, he will have every encouragement and assistance that we are capable of giving him.

*Conspicuous improvements made this year*

Both public utilities and our own organization have made many notable improvements in Yellowstone Park's facilities for accommodating and entertaining the public. The Yellowstone Park Hotel Co. greatly extended kitchens and dining rooms in its Lake and Mammoth Hotels, installed hot and cold water in the Lake and Canyon Hotels, enlarged and improved their electric-light, heating, and water systems in several establishments and refurnished one of the hotel lobbies. At Lake Hotel a new dormitory for girls was built. Fire protection both for guests and for the hotels themselves was vastly bettered.

The Yellowstone Park Camps Co. erected a splendid new lodge at the eastern entrance for lunch service to park visitors using the Cody buses. This company also razed most of the central buildings of its camp at Old Faithful and erected new kitchen and dining room



of immense proportions. In all camps, except Camp Roosevelt, numerous new cabins and tents were erected, thus greatly increasing sleeping accommodations.

The transportation utility purchased sixty new 11-passenger busses, and seven 7-passenger touring cars, a few of which were not used owing to the slight decrease in travel by rail. However, the company was so well equipped to serve its patrons this year that even had there been a considerable increase in rail travel it could have met the demands upon it without hiring outside cars.

During the coming winter, the Transportation Co. will erect at Gardiner a garage and machine shop that will doubtless be the biggest plant of its kind in the Northwest. Buildings will be of steel and concrete and will measure up to all our requirements as to architectural design. The storage garage will accommodate 500 busses.

### *Stores and studios enlarge*

At Old Faithful, C. A. Hamilton enlarged his store and installed much new equipment. This store is now the largest and best operated store in the national park system. Mr. Hamilton also built this year small but very attractive store structures at West Thumb of Lake Yellowstone and at the Fishing Bridge.

At the Canyon of the Yellowstone, J. E. Haynes built a large studio and plant for developing and printing pictures. This new structure is constructed of logs and is one of the most beautiful business establishments in the park. Mr. Haynes also established a new picture stand in the Lake Hotel. As usual, he made hundreds of new negatives of park scenes. This year, in a new and specially equipped boat he explored the entire shore line of Lake Yellowstone, photographing objects of interest all along his route.

### *Hospital service established*

Important as these improvements just described are to the traveling public, they are excelled by the new hospital service established this year. The fine big hospital building erected as a part of Fort Yellowstone has not been in operation since 1918, and never before has it been operated in the public interest, it being strictly an Army institution for the soldiers when the military patrolled the park.

Early in the year the hospital was remodeled, the wards being cut up into rooms, the rear section made an isolation ward, and the whole building repainted. It was then leased to Dr. G. A. Windsor, eminent surgeon of Livingston, Mont., who added much equipment and furnishings and conducted the hospital and medical service in a most commendable manner. Many major operations were successfully performed and a wide range of general medical and surgical practice was performed.

From the day the hospital was opened it was a success in the highest degree and was much appreciated by all who had occasion to require its service. And, in general, the fact that the hospital was available reassured and pleased the visiting public.

I want to take this opportunity to publicly commend Doctor Windsor for the unselfish interest and fine public spirit that prompted his



undertaking this medical service which not only involved a large investment by him, but also great risk in that the venture might result in heavy loss. I trust that the financial results of the season's operations will be such as to encourage the continuance of this very efficient and essential service.

### *Sanitation and camp grounds*

New construction work in the Yellowstone by our organization has been confined largely to sewer and water system extension and improvement, a comprehensive sewer system being installed at the Canyon center of interest and the water systems rebuilt and extended at Canyon, Fishing Bridge, and Lake automobile camps. Several new comfort stations and dozens of tables were built in these camps and at Tower Falls. Cooperating splendidly in the sanitation work, in mosquito control, and in general inspection of sanitary facilities, in analysis of water supplies, and in related matters, the United States Public Health Service rendered invaluable service.

### *New gateways and snowshoe cabins*

At West Yellowstone a new and very attractive gateway and checking station was built by the rangers. The idea of this combined entrance and ranger station was originated by the chief ranger, who supervised the construction. A similar gateway and station was erected at the Cody or eastern entrance, but only as a temporary expedient to serve until a permanent structure can be designed and built.

Two snowshoe cabins were built, one at Heart Lake and another at Cache Creek. Two more buildings of interesting design were built in the Dunraven Pass administration and maintenance group. The Tower Falls Ranger Station is being remodeled along lines prescribed by the chief landscape engineer.

### *Landscape work carried forward*

In addition to erecting the new buildings according to the landscape engineer's plans, much more landscape work was accomplished. Worthy of special mention is the fact the telephone line between Mammoth and Norris is being rebuilt as a matter of heavy maintenance and is being placed in a swath cut some distance from the road. The Hotel Company is cooperating in this very important work, and its officers enjoy with the Yellowstone superintendent and me a feeling of pride in the total removal of unsightly telephone poles of two separate and distinct wire systems between headquarters and Norris Junction, a distance of 20 miles. Next year the telephone reconstruction will be continued to Yellowstone Lake.

The old buildings in front of the Lake Hotel were removed last autumn, many old barns and sheds were razed at various points, and general clean-up programs carried out at several points of interest. If we now had the means to clean up the roadsides of the Yellowstone, this park would be in first-class condition so far as its landscape protection is concerned.

*Educational work*

In Yellowstone National Park the educational work has been under the general direction of the park naturalist, E. J. Sawyer, and temporary Park Ranger Frank Thone. The latter resigned from the service early in July to accept a position with Science Service in Washington, D. C.

Park Naturalist Sawyer, who is an artist, has painted many of the birds and animals of the park for the museum, has added some mounted specimens, and in other directions has expanded the collections in the museum considerably.

The lecture service at Mammoth was continued this year and was enjoyed by upwards of 70,000 people. The ranger guide service over the formations at Mammoth and at Old Faithful was likewise carried on as heretofore and was greatly enjoyed by park visitors. A new departure in Yellowstone's educational work was the employment of a nature guide at Camp Roosevelt. Dr. H. S. Conard, of Grinnell College, an experienced teacher and naturalist, conducted trips afield each day. This service was very popular and produced many compliments and favorable comments. He also lectured at Camp Roosevelt and made many botanical collections for the museum.

*Insects kill vast areas of forest*

The most serious problem now facing us in Yellowstone Park is how to control two deadly infestations of insects that are killing thousands of acres of timber. In the western section of the park a sawfly is defoliating and killing the lodgepole pine, and in the Hell-roaring and Crescent Hill sections, not far from Camp Roosevelt, the spruce budworm, another defoliator, is destroying all spruce and fir trees.

Identical insects are destroying vast areas of timber outside the park in Montana and Idaho. Some way must be found to prevent the destruction of all of the park forests, and it may be necessary to expend very large sums of money in order to preserve the sylvan beauty of the park. We are asking for a special fund of \$35,000 to control these insect pests in Yellowstone and other parks, and it is essential that this fund be provided.

The Bureau of Entomology is working very hard on our insect problems but is very much handicapped by lack of funds. However, its work this year has been invaluable to us.

*Wild animals doing well*

The past year has been favorable to the wild life of the park. The winter was mild and all species of game animals flourished. However, as noted above, the prospects for the coming winter are very bad. There may be great loss of elk and antelope and perhaps buffalo if the winter is severe, as the lack of rain prevented growth of grass on the winter range or stunted it after growth began.

The buffalo herd continues to grow, there being over 120 calves born this year. The herd now numbers 780 head. There is not much demand for buffalo for zoological gardens, nor for meat, and I be-



lieve that within a year or two we must establish a plant for the making of pemmican, for the arctic trade, as this seems to be the only feasible way of dispensing of buffalo meat in large quantities. A pemmican plant is being successfully operated by the Canadian National Park, and I am satisfied that a similar plant could be operated successfully in the Yellowstone. Authority of law exists for the erection of such a plant.

Moose which have been killed in Wyoming during the hunting season for three years past will not be hunted this year. I am glad to record here the refusal of the game commission of Wyoming to issue moose licenses this year.

### *Still no Teton extension of Yellowstone*

This brings me once more to the necessity of recording another year of unsuccessful effort in behalf of the proposed extension of the park to include the Teton Mountains and the headwaters of the Yellowstone. In the latter section the moose are found in greater numbers than elsewhere in park region and it is here that so many have been killed. This slaughter should be stopped forever, and park extension will accomplish this desired end.

I had a conference with Col. W. B. Greeley, the Chief Forester, at Moran late in July, and I feel that in the early future it will be possible for the Forest Service and Park Service to join in an effort to put through the extension plan. Colonel Greeley spent several days inspecting the areas which we want to have included in the park.

No extension plan is more important than this one, and it should be consummated at an early date.

### YOSEMITE NATIONAL PARK, CALIF.

Drought conditions existing throughout the State, the occurrence of an epidemic of hoof-and-mouth disease of long duration and exceedingly serious proportions, and an unusually long period of forest-fire menace, resulted either directly or indirectly in extensive financial losses throughout the State of California and created a business depression of considerable magnitude which was reflected in a material falling off in travel to Yosemite and a general decline from the previous year in the park's activities. In spite of these unfavorable conditions, however, travel was considerably in excess of 100,000 people, a figure exceeded only in 1923 when slightly over 130,000 people visited the park. This setback, the first since 1918, was undoubtedly due to this combination of extraordinary conditions, and does not in any way reflect a decline of popular interest in the park. I am confident that, conditions improving, 1925 will show a use of the park in excess of the record established in 1923.

While the uncertainty accompanying the general business depression created operating hazards sufficient to deter park operators and permittees from undertaking any appreciable extensions of their services or any new building construction, development plans financed by the Government or fostered by the Government and financed privately, made appreciable progress and a number of noteworthy projects were initiated, under way, or completed during the year.



*Administrative center under way*

With the erection of a new administration building, now practically completed, a start was made toward the development of the new administrative center in Yosemite Valley, plans for which were worked out a year ago. This building will be followed closely by the erection of a post-office building, contract for which has already been let, and a little later by a museum building, funds for which have been made available from the Laura Spelman Rockefeller Memorial.

These three buildings, together with the Rangers' and Officers' Clubhouse, constructed in 1921, will form the nucleus of a civic center which will include in addition, studios and stores, construction on part of which will likely be started during the autumn of 1924. This administrative or civic center will gradually replace the existing Yosemite Village in which administrative and commercial activities have been carried on for years in wholly inadequate buildings.

In working out the plans for this unit most careful attention has been paid to landscape effects and building plans so that the final result will appropriately conform to the natural landscape.

*State fish hatchery assured*

The assurance by State authorities in June, 1924, of the State's intention to erect a fish hatchery in Yosemite Valley brings to an end negotiations that have been under way for the past seven years with the erection of such a building as an object.

This word comes at an opportune time when, because of drought conditions, losses of fish resulting from the drying up of mountain streams will be heavy and result in a need for materially increased efforts in securing fry for the restocking of the lakes and streams. The fishing of the streams and lakes in the park during the past few years has increased extensively due to the rapid increase in travel from year to year accompanied by the general tendency of visitors to the park to utilize the back country of the park more and more.

The park has always been dependent upon the State Fish and Game Commission for its fry for restocking purposes but the output of the State hatcheries has never been sufficient to allow the commission to allot anything like the fry needed for the park. The installation of a two-million-egg hatchery, as proposed by the State, will help materially to relieve the shortage and will undoubtedly be deeply appreciated by the thousands of fishermen who whip Yosemite streams from year to year.

*Hikers' camps idea expanded*

The inauguration last year of a scheme of installation of small camps at short intervals along Yosemite's trails for the furnishing of accommodations to those seeing the park on foot was met with such appreciation as to justify the continuation of the experiment again this year, and the service was expanded by the installation by the Yosemite National Park Co. of two additional camps, mak-

ing five in all. Two others it was intended to install were omitted from this year's program of expansion because of the uncertain travel conditions.

The plan is still in its experimental stages but even under the extraordinarily unfavorable conditions of this year the camps were patronized sufficiently to warrant the belief that eventually such camps will be installed at such points throughout the park as to enable the hiker to secure accommodations at points within easy day's hikes, thereby eliminating the necessity of carrying bedding and supplies, and therefore adding much enjoyment and comfort to the visitor to the back country.

### *Yosemite all-year highway*

In December, 1924, a convict camp was installed at Briceburg on the Merced River and work on the construction of the last section, 17 miles in length, of Yosemite's all-year highway, was begun by the California State Highway Commission. An average of approximately 225 convicts have been employed on this work since that time and approximately 6 miles of this 17-mile stretch have now been completed. The road is being built to a full 30-foot width, on easy grades, and in accordance with the best modern highway construction methods and specifications.

It is estimated that this road will be ready for travel by the spring of 1926.

With this completed, Yosemite will be accessible by automobile throughout the year, and it goes without saying that the park will experience from the beginning a material increase in travel.

### *Miscellaneous park improvements*

With the idea of better service to the public always uppermost in mind, several improvement projects were continued during the year under funds authorized by Congress.

A ranger station and public-comfort station were installed at the foot of the Wawona grade, and plans were completed for the installation of similar units at the Alder Creek ranger station on the Wawona road, and the El Capitan ranger station at the foot of the Big Oak Flat grade, and a ranger station and small administrative headquarters at Tuolumne Meadows on the Tioga Road. Work on these latter units is now in progress and they will be ready for the 1925 automobile travel season.

Heavier wire was also installed on 2 of the 7 miles of the high-power transmission line between the park power plant, near Cascade Creek, and the transformer station near Yosemite Lodge. This is a continuation of work started three years ago and with the completion of restringing of approximately a mile and a half of the line now under way, the great saving in line losses in the transmission of electrical energy between the power plant and points of distribution in the valley will materially increase the effective output of the plant and the revenue accruing from the sale of power.

The continued extension of the park sewer system and the installation of nine additional comfort stations in the public camp grounds represent the continuation of a three-year-old project which



will be completed essentially as originally planned, with the additional extensions now under way, and by 1925 every unit of operation in Yosemite Valley will be supplied with modern sanitary facilities connected to a safe and complete sewage disposal system, sufficient to readily care for a population of from twelve to fifteen thousand people.

*No relief on road situation*

The failure of Congress to appropriate moneys for road improvement in the parks as authorized by park road act leaves the road situation in Yosemite in the same deplorable state reported in past years. The completion of the all-year highway into the park will, by the increase of travel it is bound to bring and the accompanying increase in use of the park roads, further aggravate matters unless in the meantime relief can be secured by the appropriation of money for the improvement of park roads.

Thousands of dollars are being spent annually in maintenance, and with hopelessly inadequate results, of the roads on the floor of Yosemite Valley that can only be avoided by permanent paving. Other thousands are being spent annually with no permanent results in keeping the mountain roads only reasonably passable, a situation that can only be improved by complete reconstruction of roads to safe widths and reasonable grades.

*Need of improved hospital facilities*

Last year and in previous years the necessity for improved hospital facilities, particularly the need of a new hospital building, to meet the increasing demands for medical and hospital service in Yosemite has been reported.

These improvements must be made at an early date to relieve a bad situation. An estimate has been placed in the Budget covering this item, which I trust will be given the favorable consideration by the Bureau of the Budget and Congress that it warrants.

**GRAND CANYON NATIONAL PARK, ARIZ.**

The season at Grand Canyon National Park was quite successful. Roads and trails were for the first time maintained in a satisfactory manner, increased maintenance funds having been secured. A long-needed community building, two sets of quarters, and a paint shop were constructed at administrative headquarters. Funds are available for two ranger cabins and barns in outlying sections of the park and these will be completed during the year. With the exception of the proposed building development on the north rim very little further building will have to be done other than that necessitated by the adoption of the Grand Canyon village development plan.

*Comprehensive plan for future development adopted*

The outstanding accomplishment of the year was the adoption of a comprehensive plan for all future development at and near Grand Canyon Village on the south rim. The Park Service landscape engineers, the Santa Fe System engineers, and Fred Harvey officials



are to be congratulated on the excellent results attained. I am also indebted to Myron Hunt of Los Angeles for his advice and assistance in connection with this plan. Many complicated problems were worked out to the satisfaction of all interests concerned and structures no longer will be located hit or miss, but with the assurance that they will fit in the development scheme for all time to come as far as contingencies can be foreseen. For the first time all parties concerned can build for permanence. The plan provides for a new administration building and new superintendent's residence at proper locations.

### *All-year roads for the South Rim*

While Grand Canyon National Park is open all year, there are only 7.5 miles of all-year road. Consequently visitors in the winter months who do not ride over the canyon trails can visit but a small section of the park and almost invariably shorten their stay. The system of improvement projected under the park road act contemplates rebuilding roads east and west from the end of the railroad at El Tovar. East it is planned to build to Grand View and Desert View, points on the rim from which magnificent views of the canyon are had, and west 34 miles to the Havasupai Indian Reservation in Havasu Canyon. Due to an abundance of road material near all projected roads the construction of all-year highways will be comparatively inexpensive. It is hoped that funds under the road budget will be granted by Congress so that road work may be pushed as rapidly as possible. On completion of the projected work visitors may see practically all of the park lying south of the Colorado River in winter or summer and will make longer stays in the park in order to see all of its attractions.

### *A south approach road and the Bright Angel Trail*

The Interior Department appropriation act for 1925 contains the following authorization:

For the construction of trails within the Grand Canyon National Park, \$100,000, to be immediately available and to remain available until expended: *Provided*, That said sum may be used by the Secretary of the Interior for the purchase from the county of Coconino, Ariz., of the Bright Angel toll road and trail within said park under such terms and conditions as he may deem proper and the Secretary of the Interior is authorized to construct an approach road from the National Old Trails Highway to the south boundary of said park.

This authorizes the Secretary of the Interior to purchase the Bright Angel Toll Road and Trail within the park from the county of Coconino under such terms and conditions as he may deem proper or authorizes the construction of trails within the park to the amount of \$100,000. The Secretary of the Interior is further authorized to construct an approach road from the National Old Trails Highway to the south boundary of the park.

Under negotiations carried on in 1923 members of the board of supervisors of Coconino County, Ariz., addressed a letter to you to the effect that if Congress would appropriate not less than the sum of \$100,000 that could be expended on the construction of a road between Maine, Ariz., and the south boundary of the park, the



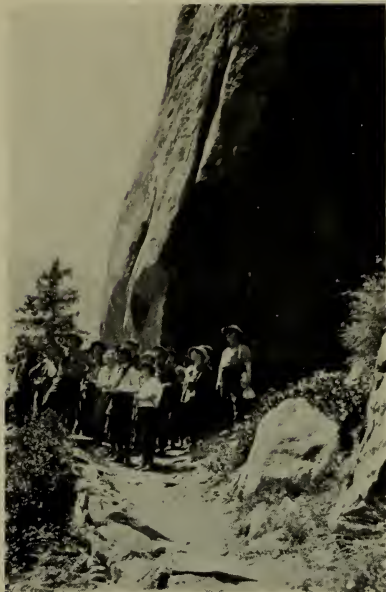
A. ADMINISTRATION BUILDING COMPLETED AND OCCUPIED OCTOBER 5, 1923



B. THE ASPENGLÉN PUBLIC CAMP GROUND  
ROCKY MOUNTAIN NATIONAL PARK

Photographs by F. J. Francis





A. NATURE GUIDE PARTY ON THE TRAIL TO YOSEMITE FALLS. THIS SERVICE CAME IN CONTACT WITH MORE THAN 100,000 VISITORS TO THE PARK



Photograph by Pillsbury

B. PRIZE-WINNING DISPLAY OF BEAD AND BASKET WORK EXHIBITED DURING INDIAN FIELD DAYS, AUGUST 1 AND 2, 1924



C. THE ADMINISTRATION BUILDING, FORMING ONE OF THE PRINCIPAL UNITS OF THE NEW YOSEMITE VILLAGE DEDICATED IN NOVEMBER, 1924  
YOSEMITE NATIONAL PARK





Photograph by Ansel F. Hall

GLACIER POINT LOOKOUT  
YOSEMITE NATIONAL PARK



Photograph by Ranapar Studio

PARADISE INN BURIED UNDER 50 FEET OF SNOW. WINTER SPORTS  
MOUNT RAINIER NATIONAL PARK



Photograph by H. T. Stearns

PORTIONS OF CINDER CONES FLOATED AWAY BY LIQUID LAVA  
CRATERS OF THE MOON NATIONAL MONUMENT, IDAHO



Photograph © by Ray V. Davis

SCENE SHOWING REMARKABLE BEAUTY OF FORMATIONS  
CARLSBAD CAVE NATIONAL MONUMENT, NEW MEXICO

county of Coconino would execute and deliver to the United States a good and sufficient deed to the Bright Angel Toll Road and Trail, conveying all of its right, title, and interest therein to the United States of America. With the appropriation made in accordance with this understanding the superintendent of the park was directed to take up with the proper officials of Coconino County the matter of purchasing the trail, and arrangements have been made for the sale of the trail at public auction. There has also been carried into the estimates for the 1926 fiscal year an item of \$100,000 for commencing the construction of an approach road from the National Old Trails Highway to the south boundary of the park on the condition that no part of this fund shall be expended until the Secretary of the Interior shall have obtained from the proper authorities of the county of Coconino satisfactory guaranties of the payment by said county of \$100,000 to be expended in the construction of the road.

With the sale of the Bright Angel Trail, thus opening it to the free use of visitors to the national park, and should Congress approve the item contained in the 1926 estimates and make the appropriation called for, \$200,000 for the construction of the south approach road would become immediately available. This approach road will be not only an asset to Coconino County but to the entire State, and to the park, and its completion at an early date under continuing appropriations by Congress is practically assured.

#### *New sewage disposal plant needed*

The outstanding need of the park at present is a new sewage disposal plant to replace the one now in use which is totally inadequate, obsolete, and a menace to the health of the Grand Canyon community. This plant was constructed 19 years ago and since then there has been an enormous increase in the annual number of visitors to the park and in the permanent residents of the community, and it should be replaced at once by a modern system.

#### *Auto camp grounds more conveniently located*

At present auto campers must carry water a considerable distance and many complaints against this inconvenience result. Conforming to the new development plan, the principal camp ground will be moved about a half mile west where it will be possible to install a gravity water supply. The excessive cost of water will probably never permit the use of flush toilets on the camp grounds, but with that exception the new camp grounds will be as interesting and comfortable as any in the park system. A campers' community house will be installed to provide excellent delicatessen service, a reading room, shower and tub baths, and many other conveniences.

#### *South rim lands overgrazed*

Park lands on the south rim have been and continue to be overgrazed. Permits for grazing stock on park lands have been reduced, but while permits for grazing on the adjacent national forest lands



are being issued it would be impracticable to refuse park permits, as there are no means to provide against stock trespassing on park lands. Grazing permits are not issued for the Grand Canyon Village area yet it is full of cattle at all times. Owners of the cattle make no apparent effort to keep them out of the area and in fact gates are repeatedly left open and fences torn down. During May and June of this year many cattle died from lack of water and feed and park rangers had to devote much of their time to removing the carcasses. Rain early in July somewhat alleviated conditions, but in August they again became deplorable. In an effort to control the drift of cattle, three expensive cattle guards are being constructed but in the final analysis it probably will be found that the only way to keep cattle out of the village area is to keep them out of the park.

*United States commissioner for park needed*

The nearest United States commissioner is located at Flagstaff, a distance of 85 miles. He does not have authority to assess fines or impose prison sentences. He can, however, providing there are sufficient grounds, bind an offender to appear before the United States district court at Prescott. The appointment of a resident United States commissioner with the same authority as that delegated to the United States commissioner in other national parks would do much to remedy an embarrassing situation. Several park rangers should also be appointed deputy United States marshals to serve without pay.

*Travel increases despite restrictions*

Considering the quarantine by Arizona against California on account of the hoof-and-mouth disease and wide publicity given forest fires in California, the increase in travel to Grand Canyon National Park was most gratifying and is an indication of the enormous increase the park would have enjoyed had normal conditions prevailed. The increase was due to motor travel and in that respect the tendency of travel is the same as in other national parks.

*North rim development too long delayed*

The development of the wonderful north rim section of the park has been too long delayed and should be begun as soon as possible. Here is located one of the few remaining virgin forests of the United States which should be retained in that condition as nearly as is consistent with reasonable accessibility and comforts to the visiting public. The development of this region as tentatively outlined, consists of roads to Cape Royal and Point Sublime, a group of Park Service buildings near Bright Angel Point, gathering the water of several springs and pumping it to Bright Angel Point from where it will be distributed by gravity and the erection of several ranger cabins. As a means of facilitating travel from the south to the north rim, stretches of the Kaibab Trail must be rebuilt, notably where it traverses the Granite Gorge on Bright Angel Creek. A modern highway with a bridge near Lee's Ferry should also be constructed from the south to the north rim.

It is believed that accommodations for visitors on the north rim should take the form of camps rather than hotels. This area should be kept exclusively for the benefit of nature lovers and for those who are willing to forego such conveniences as room with bath in order to visit it.

### ROCKY MOUNTAIN NATIONAL PARK, COLO.

The year in Rocky Mountain National Park has been successful in many ways. The summer weather was unusually clear and free from rain. In spite of the dryness, no serious forest fires occurred. Travel through the gates showed an increase, but some of the hotel proprietors are of the opinion that people are not making as long stays as formerly, but seem more interested in touring from place to place. There was no fatal accident during the year.

#### *Nature-guide service continues success*

The nature-guide service, begun last year, was continued with a large measure of success. It met with favorable comment and requests that the service be continued and expanded. The objects include public education along the lines of protection and conservation, and a stimulation of the interest of visitors in the plant and animal life of the park.

#### *Winter sports developing*

The usual winter sports were carried on at Fern Lake. Some ski and toboggan courses were constructed near Estes Park and a tournament was held during March. There are great possibilities for the future development of winter sports in this region.

#### *Record fish planting*

The Estes Park fish hatchery, which is operated by the State of Colorado, received its usual supply of eggs from the State and, in addition, the United States Bureau of Fisheries furnished 200,000 Loch Leven eggs and 650,000 native (or blackspotted) trout eggs. The total number of eggs handled this year was 1,730,000, which is the largest number ever handled by this hatchery. This record-stocking of park waters assures excellent fishing for lovers of the sport.

#### *Needs of the park*

It is hoped that before long all of the roads in the park will be widened to a safe passing width, that the present sharp turns may be widened, that the present steep grades may be reduced, and that permanent bridges of masonry construction may replace the present wooden structures.

There is need for the betterment of nearly all of the trails. This park is unusually well suited for development as a trail park, and will be used for this purpose by an increasing number of people if the more important trails are improved and a few additional trails are constructed.

The further development of camp ground is needed and it is planned to make some progress in this direction each year.

Quarters for road crews at various points in the park are greatly needed, as well as quarters for the clerical employees of the park. There is also need for a ranger station on the same site as the administration building, a stable at the utility site, and a community house at one of the camp grounds.

The educational work of the park would be greatly increased by the construction of a small museum, which could also serve as headquarters for the nature guide and information service.

The problem of snow removal from the Fall River road is still a serious one. It would be improved by the purchase of a steam shovel and by the construction of buildings near Fall River Pass, in which the workmen could be housed during the inclement weather that is encountered above timberline during the months of May and June.

You, yourself, Mr. Secretary, visited this park during the past season, and inspected some of its activities and noted its urgent need of development to safely accommodate the thousands of visitors who are resorting to it.

#### *Some improvement of the Fall River Road accomplished*

Last year the retaining walls collapsed at four points along the Fall River Road. This year the road has been widened at these places by excavation into rock. The retaining walls have been replaced with gravity slopes, and the road is now of adequate width at these points. During the winter two other retaining walls collapsed. One of these, 24 miles from Estes Park, was 17 feet high and 50 feet long. This wall has now been replaced with a masonry wall and the road also widened. At the other location, near Farview Point, the road has been widened but the wall has not as yet been replaced.

The Fall River Road is greatly in need of widening, in order that it may safely handle its heavy and increasing travel. A number of metal culverts have been placed this year and some surfacing has been done in the most necessary places.

#### *Road to Bear Lake opens attractive region*

Two years ago, sufficient work was done on the road to Bear Lake to make it barely passable for automobiles. This year additional work has been done, and the road is now being used very extensively by automobiles. A ranger station was built at this location last year. During the present year a trail from Bear Lake to Odessa Lake was constructed which is proving very popular. There is no question that the region around Bear Lake will receive an increasing number of visitors each year because of the many attractive trips that can be taken from that point. In order to keep pace with the demand the road must be further improved, a camp ground developed, more parking space provided, and additional trails constructed.

#### *New administration building creditable addition*

In October, 1923, the headquarters of Rocky Mountain National Park were transferred to the new administration building, which was constructed by the National Park Service on a lot presented to



the Government by the Estes Park Woman's Club. This building is a very creditable and useful addition to the park development.

*A year-round utility site purchased*

The appropriation for 1924 included a provision for the purchase of land. One tract obtained under this appropriation comprises 20 acres for a utility site, and is located 2 miles from Estes Park, less than half a mile inside the park boundary. Heretofore the nearest accessible Government land on which shops, warehouses, stables, and road camps could be located, was 6 or 7 miles distant from Estes Park and not accessible during the winter months. The new tract will be accessible every month in the year and will permit the grouping of shops and utility buildings at this central point.

During the year a machine shop was constructed, in which motor equipment may be overhauled during the winter months and kept in repair during the summer. A nine-stall shed garage has been constructed to shelter the motor equipment during the winter months. A warehouse is nearly completed and a mess house to be used by a road crew is under construction. This utility site will be an important factor in facilitating the efficient handling of construction and maintenance work in this park.

*Additional camp grounds secured*

The Rocky Mountain National Park has heretofore been handicapped by lack of public camp grounds. The 1924 appropriation also provided for the acquisition of private land for this purpose, and three tracts have been purchased, as follows:

Aspenglen camp ground, 41 acres, located 5 miles from Estes Park.

A 19-acre tract, 8½ miles from Estes Park, at the upper end of Horseshoe Park.

A 20-acre tract located 2½ miles from Estes Park, south of the Highdrive and adjacent to the utility site.

During the present year, the Aspenglen camp site has been made accessible by a new road, and has been sufficiently developed to permit its use by the public. It is expected that one of the other camp grounds will be made available next season. These new camp sites will do much to add to the comfort and enjoyment of campers and will avoid the necessity of campers using private lands or camping along the roadside as they have heretofore done to a considerable extent.

**MOUNT RAINIER NATIONAL PARK, WASH.**

The outstanding feature of the year's operations in Mount Rainier National Park was the opening of the Nisqually Road as far as Longmire during the winter months and the enthusiastic response to the service's first attempt at making the park a winter playground.

*First winter season a success*

As the result of a definite demand on the part of the public for entrance to the park during the winter months, the road from the entrance to Longmire was kept open by means of a snow-plow attachment operating ahead of a caterpillar tractor.

Accommodations were provided at National Park Inn by the park operator. A one-track toboggan slide, skis, snowshoes, and other equipment for snow sports were provided. Nearly 10,000 people visited the park attracted by the opportunity for winter sports. It was demonstrated that the Nisqually Road as far as Longmire can be kept open during the winter without great difficulty and with little expense. Situated as it is, within three or four hours' comfortable automobile drive from Puget Sound cities, Mount Rainier National Park is destined to become a famous winter resort. Toward the end of last season many visitors left their homes in the morning and driving in entire comfort to Longmire Springs, hiked to Paradise Valley, arriving in time for lunch and after several hours' enjoyment of snow sports, such as tobogganing, skiing, snowshoeing, etc., hiked back to Longmire and drove to their homes in time for dinner.

### *Nisqually Road finally opened to two-way traffic*

For the first time in the history of the park the Nisqually road from park entrance to Paradise Valley was opened on June 25 to unrestricted traffic. With the elimination of the control system over the former one-way road, the time has been reduced from Puget Sound cities to Paradise Valley by fully one hour.

The popularity of Mount Rainier National Park is now firmly established and the right of visitors to adequate provisions for the enjoyment of its beauties can not be denied. The greatest need of the park is an extension of its highways. Paradise Valley, but one of a number of equally beautiful Alpine parks, is at present the only locality of its type accessible to the average visitor. Many guests leave the park with the impression that when they have visited Paradise they have seen all there is to see in the park. With only 35½ miles of road offered the automobilist who comes from great distances to enjoy the park and but 20 miles of that in one continuous stretch, it is no wonder that the New York Times insisted that such mileage was not enough to induce the eastern visitor to put himself out to visit the park. The building of roads, the enlargement of camp ground facilities, and an increase in the ranger force in order to care for the park and give proper service and information to visitors are the greatest needs of the park.

Business depression undoubtedly affected eastern travel, although Ohio, New York, Massachusetts, and Illinois were within the 10 leading States in number of visitors. Bad weather conditions on a number of week-ends affected local travel. Despite these adversities, the travel increase continued.

### *Inadequate camp grounds*

The tremendous increase in the number of persons using the public camp grounds has taxed facilities entirely beyond the park's ability to accommodate them. Fully 90 per cent of the park visitors desired to camp in the public camp grounds.

Visitors upon paying their entrance fee feel that they are entitled to adequate camping facilities and are disappointed, if not actually angry, at the paucity of accommodations offered them. Continued inadequacy can not help but react in a way unfavorable to the best interests of the service.



On week-end and holiday periods there has been a congestion in all camps to the extent that not over 40 per cent of the campers could be comfortably accommodated. The simple requirements of the camper—water, wood, and sanitary facilities—should by all means be provided. During these periods hundreds of visitors were not able to find space in Paradise large enough to pitch their tents and as a consequence many of these people left the park to camp at the roadside camp grounds outside the reservation. The camp grounds at White River, Carbon River, and at Longmire Springs are only to a slightly lesser extent inadequate. A community building with a large room and fireplace to provide shelter in stormy weather and at the same time serve as a meeting place for campers and others who use the camp grounds should be built at each camp ground. The building will serve as a camp headquarters and provide a place for camp-fire meetings, lectures, and other forms of entertainment by the nature-guide service.

### *Educational service*

Beginning in 1922 the nature-guide service offered an opportunity to visitors for nature study. With only one man in charge of this educational work it has become the most appreciated of any service provided. Daily nature walks by the park naturalist and his assistant and illustrated lectures at night have proved popular both at Paradise and Longmire Springs. An average of from 40 to 60 people made the daily trips, accompanied by nature guides who explained the natural features of the park. This work has grown to a point where it should be recognized by adequate financial provisions for the purchase of lanterns and slides.

### *Road improvements*

The widening work on the Nisqually Road progressed to the point where that road could be opened and operated for two-way traffic its entire length. Four bridges, numerous culverts and drainage ditches, further widening of narrow places, as well as surfacing are required before the road can be completed. The contractor completed his work on the Carbon River Road, 8 miles in length, from the entrance to a point a mile from the Carbon Glacier. The upper 3 miles of this road was constructed as a one-way road. Due to damage caused by floods of last February this road was not in good condition. Before repairs can be made it is necessary to construct considerable revetment work to protect the lower section of the road from encroachment by the river. This work will be done during the fall of 1924. Once protected, work may be continued on repairing the damage and surfacing of the entire road. About a mile of the county approach road has never been completed and it is hindering travel. It is hoped that before next season Pierce County can make the road passable, so that the Carbon River section will be accessible.

The White River Road suffered serious damage from the floods of last February, necessitating expenditure of over \$3,000 emergency funds, in addition to the maintenance funds, in order to open it to automobile traffic. This road is located for part of its length along



the bank of the White River. Owing to a section of the road being practically on a level with the river, high water cuts into the right of way, doing great damage. This road will have to be relocated on a bench some 40 to 100 feet higher than the old river bar, which is constantly threatened by the stream. The popularity of the White River section of the park demands that the road situation be given the earliest consideration.

It is hoped that funds may be available so that work may be started early next spring on the reconstruction of the White River Road, the surfacing and improving of the Carbon River Road, and the surfacing and draining of the road above Longmire Springs.

### *Housing problem serious*

The increase in winter travel demands several additional employees throughout the winter. In order to secure and retain efficient help comfortable quarters must be provided for them. Tent quarters at Longmire Springs are not satisfactory where the average winter snowfall is 22 feet and frequent zero weather is experienced.

### **GLACIER NATIONAL PARK, MONT.**

Glacier Park continues to grow in popularity with the motorists. This was demonstrated by the great increase in motor travel this year, when there was a decided decrease in train travel owing apparently to adverse economic conditions. Undoubtedly this motor travel will rapidly increase when the Transmountain Road across the Continental Divide is finished.

### *Road development*

Work on the Transmountain Road was pushed as rapidly as possible and the general road system of the park was maintained at a higher standard than ever before in the history of Glacier. The Flathead County commissioners aided materially in the repair of the North Fork Road by furnishing two trucks for use thereon and also donating \$300 for this work.

The highways leading to the park have been greatly improved through the cooperation of the State Highway Commission and neighboring counties, and also through the efforts of the Park-to-Park Highway Association, the Y-GB-Line Association, and the Roosevelt Highway Association.

I am hoping that the Canadian National Park Service will soon complete the road through Waterton Lakes Park to connect with our North Fork and Babb Roads, thus facilitating travel between the parks of the two countries.

### *Land exchanges*

For some years I have been greatly concerned over the location of several tracts of privately-owned land in Glacier National Park at strategic points, and it is therefore with keen satisfaction that I have to report the successful consummation of the exchange of timber only, in a portion of the park unfrequented by visitors, for one of these

private holdings which adjoin the administrative headquarters at Belton. Negotiations have also been entered into providing for the acquisition of another private tract at the Belton entrance by exchanging park timber for it. The acquisition of these two tracts of land has been one of the most important private land propositions before the National Park Service.

### *Forest fires*

The occurrence of 16 forest fires in Glacier National Park this year, which necessitated the expenditure of about \$8,000 of the general forest fire fighting fund for fighting and extinguishing them, emphasizes the need for adequate fire-fighting apparatus in all the parks. Only two of these fires were in any way traceable to carelessness on park lands, one being caused by a camp fire left burning by visitors and the other by brush fires started on the right of way of the Transmountain Road. The latter was taken up so forcibly with the road contractors that it is believed there is no further danger from this source. The other fires in the park were caused either by electrical storms or by sparks flying from brush fires on near-by private property and from a passing railroad train.

### *Change in administration*

During the year former superintendent J. R. Eakin was transferred to the superintendency of the Grand Canyon National Park and Charles J. Kraebel was appointed superintendent of the Glacier National Park.

## **CRATER LAKE NATIONAL PARK, OREG.**

Crater Lake this year definitely established itself as one of the major parks. Its increase in travel, 64,312 visitors, as opposed to 52,017 in 1923, a gain of 24 per cent, is a notable demonstration of popularity. This great increase is traceable to four factors, viz, an early opening; its location almost midway in the Pacific Coast chain of parks extending from Sequoia to Mount Rainer; the improvement of approach roads; and increased publicity, largely spontaneous, given by lovers of this Cascade gem.

### *Two approach roads practically completed*

Crater Lake travel was given great impetus by the completion of the Mile-high Highway, a fine macadam road connecting Klamath Falls with the Pacific Highway 6 miles south of Ashland. This route over the splendidly forested Green Spring Mountain was a new pleasure enjoyed by thousands of autoists. This year also witnessed the widening and surfacing of the McLeod-Cascade Gorge section of the Crater Lake Highway out of Medford, so this road is now full width throughout and macadamized except for the last 6 miles. As usual, the Medford route carried a distinct majority of visitors to the park. The loop trip to the park via the Medford route and out via Klamath, or vice versa, was taken by probably a majority of out-of-State visitors.

Travel from Diamond Lake increased very appreciably, emphasizing the need for improving the park auto trail into a suitable road and the establishing of a permanent ranger station at or near the north entrance.

Due to the very poor condition of certain sections of the road south of Bend, travel through the east entrance was negligible. Another two years, however, should see the completion of The Dalles-California Highway, when the east entrance should assume a new importance. Railroad travel, now less than 2 per cent at Crater Lake, also is expected to increase in 1926, with the completion of the cut-off now under construction.

### *Park roads not yet improved*

The fine condition of the two main approaches served to emphasize the fact that Crater Lake suffered, in common with other parks, because of the failure to provide funds for the road program. Crater Lake's road system of 57 miles (exclusive of the Diamond Lake auto trail) has never been surfaced and naturally could not withstand the battering of an average of over 200 cars daily. The park is volcanic in origin, so that for the most part the road surfaces are mere pumice gravel or light volcanic ash that ruts and dusts miserably. The abnormally early snow recession, together with a very dry season, made satisfactory maintenance impossible, particularly as reduced appropriations limited all road expenditures to \$10,220, of which nearly 15 per cent must be reserved for snow removal next spring.

Altogether the situation at Crater Lake—the great disproportion between road conditions and demands made upon them—emphatically illustrates the necessity for immediate improvement of roads.

### *Insect menace grave problem*

The continued destruction of forests by insects is a serious menace to this park. A preliminary study made by entomologists from the Federal Bureau of Entomology shows that infestation has wrought havoc throughout an area of some 30 square miles of lodgepole pine. This destruction has been under way about 10 years, so that in the northeastern and northern sections of the park thousands of dead trees mar the forest vista and constitute a grave fire hazard. Worse, the infestation is spreading, fresh areas having been attacked this year. Remedial control legislation is essential, but to be effective with the park the work must also be undertaken in the surrounding forest reserves.

### *Bears need protection*

Ten bears, including two pairs of cubs, provided an almost unceasing source of pleasure to thousands of visitors, particularly from those States where such wild life has practically disappeared. In daily contact with mankind these animals become docile and fearless, leading to their easy destruction at the hands of hunters who encounter them outside of the park. A movement toward a bear preserve surrounding the park fortunately has received strong support. A questionnaire submitted to cattlemen and sheepmen grazing in the



surrounding areas elicited 77 responses, all but 5 of which approved the idea. It is hoped that the Oregon Legislature may take favorable action during its next session.

### *Camp-fire activities*

A noteworthy feature of Crater Lake activities was the number of impromptu entertainments organized in the camp grounds. Singers, musicians, and other entertainers, recruited from park employees, brought campers together evenings about a central camp-fire to enjoy wholesome informal "stunts." Stimulated by the spirit of the thing, volunteers willingly came forward to contribute to the general pleasure. In midseason the community house became the center of evening camp life, where Americans from all over the country rubbed elbows in that friendly communion which it is the privilege of the parks to promote.

The attendance at this park, and the numberless features requiring intelligent explanation, make it essential that a nature-guide service be organized as soon as possible.

The attitude of visitors merits special comment. Evidently alive to the fact that this was the worst forest fire season in years, they were especially attentive to camp fires and zealous in reporting small fires. In consequence, Crater Lake went through a hazardous season without a single serious forest fire caused by campers' carelessness. I am happy to report, too, that despite the heavy travel no serious accident or collision marred the season.

### *Improvements*

The national economy program restricted construction to two projects. The first, the remodeling of a log cabin at Government Camp into an office building containing an information bureau, a general office, and superintendent's office, took care of a pressing need. A modest community house of appropriate design was constructed at the Rim auto camp. A considerable amount of repair and upkeep of buildings also was accomplished, but energies were necessarily concentrated upon the pressing problems of road maintenance.

Except for the road situation, park facilities are nearly in step with requirements. Camp grounds, sanitary provisions, and water supply were abreast of demands except during periods of peak loads. The main trails were well maintained and the less used trails sufficiently so.

### *Public utilities*

Work on the addition to the Lodge has been under way all summer. It is now an imposing structure, more than doubling the capacity of the original hotel. Twenty-two new rooms were finished and put into use. A new launch was safely taken down the Crater wall and placed in commission.

The Kiser studio was enlarged, a small wing being added to provide a one-day developing service in the park.

*Diamond Lake extension*

The enhanced popularity of the Diamond Lake area as a tourist attraction justifies repeated pleas for its preservation to the American people by incorporation into Crater Lake National Park. If, as the tendency of its development indicates, its sole value rests in its recreational aspects, there are, so far as I know, no elements in the situation which can not be reconciled in effecting this desirable transfer.

**SEQUOIA NATIONAL PARK, CALIF.***Saving in sewer system construction*

The most important event in the Big Tree Park during 1924 has been the construction of a sewer system at Giant Forest; and the system will be built well within the appropriation of \$39,500. It is hoped even to report a small saving which by conscientious work of all employees and by economies has been found possible during construction under Sanitary Engineer H. B. Hommon and Mr. Lawrence Sovulewski.

*Travel and general development*

The travel for the 1924 season was 11,032 autos and 34,468 visitors, the park thus showing a gain of 15 per cent in visitors over 1923 at a time when everything conspired to hinder travel to national parks and other mountain resorts in California. Despite forest fires in the national forests, financial depression, the foot-and-mouth disease, and the great drought the Sequoia National Park forged ahead.

The 33 per cent increase in national as distinct from local travel is a promising indication of the greater usefulness awaiting this park when the Generals Highway gives a shorter and easier means of reaching the mightiest forest in the world.

Progress was made in extension of public auto camps at Giant Forest and on the Middle Fork region now opened up by new State highway to the park boundary. This perfect State road was opened to travel in January and no more urgent need confronts the park than the early completion of the park section of 17 miles from the end of State highway to Giant Forest.

The permanent park headquarters at Alder Creek was occupied in October, 1923, and the centering of all personnel and activities there should result in material economies in the administration of both Sequoia and General Grant National Parks being effected.

*The Generals Highway*

Small appropriations have made it necessary to go slowly but very surely on this new avenue to Giant Forest. During the past year about 3 miles of new construction was finished except for final culverting, surfacing, and grading; and the work was so carefully done by General Foreman James B. Small that the preservation of landscape value has brought forth praise from all visitors, whether trained engineers or architects or casual observers. While

it had been hoped to open the new road to travel in 1924 it is felt that the delay is more than offset by the quality of the work and the economy of construction. It is hoped, however, that the road may be finished in time to permit some travel during the 1925 season.

### *Nature-Guide Service and Museum*

This important work was further extended by United States Commissioner Walter Fry. Over 300 flower specimens were mounted and with other exhibits were housed in two tents pending construction of a much needed fireproof museum building. When it is considered that in 1918 Judge Fry lost the fruits of 20 years collections by fire, it seems imperative that such an accident must not again be permitted.

Nature-guide walks, lectures, and other entertainments filled the summer months and delighted thousands of visitors who prefer to spend their holidays in the study of nature rather than in the hackneyed entertainments of the average summer resort.

Pageant Master Garnet Holme, with his mountain, forest, and desert players, presented "Rip Van Winkle" under the big trees at financial loss but æsthetic profit.

A feature of the Giant Forest life is the cordial cooperation given the superintendent by public-spirited women who organized regular weekly entertainments.

### *Proposed park extension*

Of the Barbour bill to enlarge the present park to include some 900 square miles of California's forest, mountain, and canyon scenery, it may be said that it slumbers but does not sleep. When the enlargement seemed almost assured, opposition from associations of irrigationists in the San Joaquin Valley came as a blow to those who have for years striven for the park extension. While believing that the opposition is due to a misunderstanding of facts and values, the opinion of the people of the San Joaquin Valley must be respected and safeguards given them against any interruption to the use of water for agricultural and other valley purposes. I am convinced that the opposition is founded on a misapprehension of the policies of the National Park Service. The interests of valley people and the protection of the watershed can not be better assured than in a national park.

I understand that the restrictions on travel in the national forests of California during the past year, due to the forest fires, while park travel was unrestricted, caused many packers heretofore opposed to the park extension to reconsider their attitude. In fact, the attitude of the park administration in encouraging park travel saved the packers' business during the season. The national and scenic value of the proposed extension is only equaled by its economic value to the people of the Great Valley when developed and protected as one of the two or three major attractions of America.

### SEQUOIA AN ALL-YEAR PARK

The completion of the State highway from Three Rivers has made the Sequoia an all-year park and it is the nearest national park to



the great tourist centers of California. No other park has such an altitudinal range, from 1,300 to 12,000 feet, or is so easily reached from valley points. Further increase in appropriations is necessary to provide for travel which improvement of county and State roads sends to the park.

#### GENERAL GRANT NATIONAL PARK, CALIF.

Steady progress marked the past year in this small but popular park which may be considered for all practical purposes as an outlying part of the Sequoia National Park. It is now only 60 miles or three hours by automobile from permanent headquarters for both parks at Alder Creek, or less distance than are many stations in Yellowstone and Yosemite from their park headquarters.

The greatest usefulness of General Grant National Park is as a week-end resort for the people of San Joaquin Valley towns situated within two and one-half to four hours' motor travel. Fresno and Tulare Counties have so improved the Sand Creek and Dunlap roads that the park may be reached in high gear. National travel is at present overshadowed by local travel, but this will not be the case when the Generals' Highway links Sequoia and General Grant for at least six months every year.

Travel for 1924 was 9,118 autos and 35,020 visitors as compared with 12,136 autos and 46,230 visitors in 1923, an excellent showing when the interruptions of forest fires, cattle disease, and financial depression are considered.

The principal needs of the park are continuation of appropriations on a scale adequate to permit development with the travel demand and a closer connection with park headquarters in the interest of efficient and economical operation.

#### MESA VERDE NATIONAL PARK, COLO.

The nation-wide interest in this comparatively isolated and unique national park is well attested in the attendance during the present season, visitors coming from every State in the Union and from six foreign countries to observe and study the notable and well-preserved ruins of prehistoric American cliff dwellers.

The scenic features of this park are equally as important and unique as the ruins which the park was created to preserve and protect, and during the season just closed over 35 per cent more visitors have registered at park headquarters than during the 1923 season. None of the national parks has shown a more consistent and healthier normal annual increase in attendance.

Service to the public by the various park operators has been very satisfactory during the present season, and all visitors have been well cared for at all times.

#### *Desperate water situation*

The water supply of the Mesa Verde becomes yearly a more desperate problem. Despite the fact that funds as requested have been provided for the development of additional water, development has not kept pace with the increased attendance. There is no pos-

sibility of obtaining drinking water by drilling wells, and we have been forced to an adaptation of the methods of the ancient cliff dwellers to obtain the little now available. Since June of the present season, the use of water has been most stringently curtailed. Large enamel signs have been placed at each outlet, warning visitors to use water conservatively, as the supply was limited, and the superintendent posted additional notices prohibiting the use of water for laundry and bathing purposes. The hotel bathhouse was closed in early June and the laundry closed, except for brief periods, during practically the entire summer. All building construction was stopped June 30, with the exception of the work on the reservoirs and dams, and only murky water unsuitable for human consumption was used in this work. Stock had to be watered for most of the season in the lower Navajo Canyon or at the Mancos River 8 miles from headquarters. At times during August there was less than 2 gallons of water available per person during a 24-hour period. The very growth and development of the Mesa Verde National Park is controlled by the water situation, and increased appropriations for a larger development of the water supply must be provided or the park will not be able to accommodate all those who might wish to visit it.

### *Roads and trails*

With the exception of the Knife Edge Road the park roads have been maintained in excellent condition during present travel season, thanks, fortunately, to a season of unprecedented drought. In dry weather the park roads are generally very good as far as road surface is concerned but in wet weather they are very treacherous and until the excessive grades have been eliminated, switchbacks and hairpin turns corrected and the roadbed widened and hard surfaced they will not compare at all favorably with the improved roads leading to the park. Park roads should be comfortably passable in wet weather as well as dry.

The Knife Edge Road was particularly damaged by the excessive rains of the previous season and during the present season since April 15 but two quick showers have visited that section. Drought accompanied by heavy winds started an extensive movement of the disintegrated shale below the road which threatened for a period the very roadbed and succeeded in reducing the travel width to less than 9 feet for a distance of 1,100 feet before the movement was checked. One good soaking rain in the early part of July would have saved this park \$4,500 expended in checking this movement of shale.

All park trails have been maintained in excellent shape. On August 3 a very local cloudburst partially destroyed 3 miles of the Rock Springs trail, but this was immediately repaired.

### *New buildings*

For the first time since the park was created in 1906, funds have been provided for a warehouse for park supplies, and a shop for overhauling and repairing machinery and equipment. These two units of the industrial group have been constructed and placed in

service. Construction has been started on the employees' mess hall and employees' dormitory, for the use of the white labor forces; the clerks' quarters and the public comfort station in the main administrative group have been in use for some time. All these new buildings were most urgently needed and make for economy in operation and contentment of employees.

### *The park museum and other gifts*

Again the desperate water situation has defeated all plans to complete the museum and dedicate it this season. This building is a gift to the park by Mrs. Stella M. Leviston, of San Francisco, and additional gifts totaling \$2,000 have been added this spring to her original donation for this purpose. The work of completion is solely dependent on water for masonry fire walls, cement floors, and plastering.

The friends of this park are legion and their desire to see it develop and engage in activities that the Government makes no provision for, has resulted in many voluntary gifts and pledges running from \$1 to \$3,500 during the present season. These gifts cover many activities and items ranging from furniture and fixtures for the new museum to archeological work to be undertaken under the direction of the superintendent, and from donations to a fund for the production of ancient Indian ceremonials by the present Navajo Indians, to supplies and equipment for the first-aid station maintained for the benefit of park employees and visitors. But for the generous gifts of friends this scientific, medical, and educational work could not have been undertaken, and to these friends, known or unknown, the National Park Service and the people to whom the parks belong, owe an everlasting debt of gratitude.

### *Archeological work and recent discoveries*

No excavations have been attempted during the present season as available funds would not more than care for the repair and protection of ruins previously excavated. A great series of prehistoric dams were found late during the past season near headquarters and are now accessible to visitors by means of a foot trail constructed this spring. A beautifully proportioned watch tower, still standing to a height of 25 feet, was discovered on the west side of the park during the present season and a site containing the remains of the very early post basket maker culture has been identified in Step House Cave, also in the west portion of the park.

### *Camp-fire talks*

Informal camp-fire talks were given around the camp fire by the superintendent and the rangers each night during fair weather. Visiting scientists, travelers, and educators frequently give short talks at these meetings, which were ended as a general rule by the Navajo Indians who give a portion of the famous Yebeichai dance, much to the delight of visitors. These talks were usually attended by all visitors and at times during the past season over 200 people were present on a single occasion.



*Approach roads*

The southern entrance or approach road to the park from Gallup, N. Mex., via Cortez, Colo., has now been placed on the 7 per cent State highway systems of New Mexico and Colorado and approved by the Secretary of Agriculture. This means a rapid improvement of this 148-mile stretch across the Navajo and Southern Ute Indian Reservations. The State highways of Colorado forming the main approach roads to north and east are being constantly widened, improved and hard surfaced and during the coming year the hard surfacing will be carried to and beyond the park-entrance road. From then on park roads must be widened, grades, curves, and switchbacks improved and roadbed surfaced if the park roads are to conform to the approach roads leading to the park.

**HAWAII NATIONAL PARK, TERRITORY OF HAWAII**

The remarkable activity of Kilauea referred to in my last report increased during the past year until in February the lake was nearly full. Then a mass of hardened lava formed over the surface of the boiling lake and suddenly burst, sending huge sheets of lava high into the air. After this a whirlpool formed into which the lava rocks whirled, and within two days all the lava disappeared, leaving only a 500-foot smoking pit into which the cool walls tumbled.

Several months of quiet followed, but in May the volcano returned unexpectedly to the crater. During the disappearance of the lava and crashing in of the walls during the winter the gas vents in the crater had been filled up, and when the gases returned with enormous force they cleared these vents by a series of terrific explosions, hurling rock and ashes for miles into the air. Red-hot boulders weighing many tons were hurled over a mile away, accompanied by amazing electrical displays. During this disturbance it was necessary to establish safety zones around the crater.

In the three weeks in which these explosions occurred the crater was enlarged to four times its former size, and is now 200 acres in area and 1,500 feet deep.

For a few weeks after this the volcano was normal again. Then a lava geyser suddenly appeared at the bottom of the pit, sending up a roaring column of lava 200 feet and building up a small cinder cone and forming a 10-acre lava lake on the floor of the pit. In a short time this too disappeared, and at present Kilauea is quiet, with only an occasional gleam of fire showing at night in its depths.

*Effective publicity and volcanic displays bring increased attendance*

The publicity given to Kilauea's violent activity in the press generally, and the effective advertising given the Hawaiian Islands and the Hawaii National Park in particular brought a greatly increased number of visitors. In addition to paid advertisements numerous articles have appeared in high-grade publications, and motion-picture films have been distributed through the States. The issuance and distribution of an edition of 100,000 folders descriptive of Hawaii National Park by this organization was an important factor in increasing travel.

*Future development*

Kilauea's behavior reminds us that we must develop some of our many other features; for volcanoes are not only erratic, but are most dangerous at times when they are most impressive. With but 14 miles of good road in the park additional road construction is essential. Nothing will so popularize the Hawaii National Park with visitors and among the citizens of Hawaii as the construction of a road through the Pit Crater district of the Kilauea section. This can be cheaply built, and would pass along the rim of several pit craters of various sizes, many steaming, and two containing molten lava during the past two years. Near by is the 1923 lava flow where acres of forest were destroyed by lava spurting from earthquake cracks.

In the development of the Mauna Loa section considerable money will be saved the Government by waiting until the Geological Survey completes their topographic mapping of this area, thus avoiding the duplication of much engineering work. There appears to be no immediate need for a road to the summit of Mauna Loa.

The Haleakala section is worthy of early consideration; it is a wonderful place, and I hope soon to obtain satisfactory title to all portions desirable for national-park purposes. The frank enthusiasm of the people of Maui will make the development of Haleakala a pleasure to the Interior Department.

*Present roads*

The half mile of road leading to the rim of the volcano was absolutely obliterated by the eruptions, but parking space has been built 1,000 feet from the new crater rim, with a smooth trail beyond. Our most dangerous roads during the eruptions were those covered with a coating of "skiddy" ashes, insoluble, and a menace to safe driving until removed by hand.

**LAFAYETTE NATIONAL PARK, ME.**

Marked advance has been made in the development of Lafayette National Park, the entire area of which has been a gift to the nation. Three additional donations of land amounting to 358 acres have been made and accepted for park purposes during the year. These were tendered by the Hancock County trustees of public reservations, Charles W. Eliot, president. The chain of title to the lands conveyed revealed the fact that they were once part of the Province of Arcadia dating back in part to a grant by Louis XIV, King of France in 1688, and in part to a concession made in 1762 by the general court of the Province of Massachusetts. The park area, in addition to being rich in historic interest, includes the group of granite mountains among the oldest in America and the highest prominence along the entire Atlantic coast. Its bird and plant life, its ancient geologic story, and the prolific marine life in the ocean waters that surround it make the park of extreme interest not only to the scientist and student but to the casual visitor as well.



*Park roads approved*

The advisability of continuing road construction along lines approved in 1922 resulted in your holding a hearing here in Washington in March which all those who were opposed to the continuance of the approved work were invited to attend. You visited Lafayette with me in the early summer and personally inspected the park and examined its road-building program, and after the whole matter of road construction was thoroughly reviewed, approved the roads under construction, that for use with motors and that for use with horses. Construction of the first motor road in the park, being built with generous contributions, is proceeding rapidly. It is in every sense a park road and far from bringing any discordant element into the landscape will open its interest and wild charm to countless visitors. The road to the summit of Cadillac Mountain, which branches off from this motor road, is planned for construction when funds authorized for the park road program become available. In this connection I desire especially to commend the superintendent and his forces for the painstaking care that has been taken in this construction work not to mar the park landscape. I consider the work that has been done the finest I have observed in mountain road building and I have in mind having all the road engineers of the National Park Service personally inspect the work so that they may take back to their own desks a desire to emulate the fine work that has been accomplished in Lafayette.

**HOT SPRINGS NATIONAL PARK, ARK.**

The cooperative arrangement with the Treasury Department was continued by having the United States Public Health Service detail a medical officer to act as superintendent. Dr. James Bolten, vice Dr. C. H. Waring, assumed charge March 24, 1924.

*Government free bathhouse and clinic*

A total of 4,025 persons bathed in the Government free bathhouse during the year. These persons were given 59,683 baths. New applicants numbered 3,676.

The free clinic operated in connection with the free bathhouse and under control of an officer of the Public Health Service examined and treated 3,676 persons. Of these 2,227 were venereal and 1,449 were nonvenereal cases. The total number of examinations and treatments given was 43,824. The course of instruction for physicians was continued this year and one or more student physicians completed the course each month.

*Pay bathhouses*

No new pay bathhouses were constructed. The Arlington Hotel, now under construction, expects to open its hotel and bathhouse on January 1, 1925. This will complete the number of bathhouses that will be operated next year.

Total profits reported by 16 pay bathhouses were \$89,333.41. Three pay bathhouses reported deficits amounting to \$6,016.87 for the year. Total baths numbered 693,685, while total pay baths given were 610,523.



*Miscellaneous improvements*

A new comfort station was built on Hot Springs Mountain. In the free bathhouse and clinic 1,850 square feet of radiation was installed. Three shelter houses and 9,000 feet of trails were constructed. The police force was reorganized and is operating more efficiently. Curves on some of the roads have been eliminated, giving a greater factor of safety. The new Arlington Hotel, now nearing completion, will add greatly to the beauty of the city and is a worthwhile asset.

*A central impounding reservoir needed*

A central impounding reservoir should be built to take care of the seepage and overflow of hot water now going to waste, to anticipate an increase in the number of baths, and to avoid any shortage of water. This reservoir could be built for about \$40,000, and would furnish all bathhouses equally with the necessary amount of water.

*Auto travel heavy*

Tourist travel by auto has been exceedingly heavy. With the opening of the new paved highway between Hot Springs and Little Rock travel by auto is expected to increase. Visitors by railroads numbered 122,175 and by auto 42,000, a total of 164,175.

*Hot waters to be investigated*

A conference of leading members of the medical profession called together by the National Research Council at the request of the Secretary of the Interior unanimously adopted resolutions urging a thorough investigation of the physiological action and therapeutic value of the waters of the hot springs. At your direction an estimate of the cost of such an investigation has been included in the estimates of appropriations for the 1926 fiscal year.

*Sanitation and public-health measures*

Bathhouses are given at least five regular inspections each month and are inspected at irregular intervals. All employees of the bathhouses are given monthly physical examinations to detect communicable diseases. Individual health cards are issued. New attendants are given complete physical examinations. Bacteriological examinations are made of the water, and mosquito-control work is carried on.

**MOUNT MCKINLEY NATIONAL PARK, ALASKA**

The tremendous uplift of Mount McKinley, the highest mountain in the world above its surrounding base, and the climax of Alaskan scenery contained in Mount McKinley National Park make it as a scenic attraction the most valuable asset of the Alaska Railroad in developing tourist travel to Alaska. Before this asset can be made to return a cash dividend, however, it is necessary to make the park accessible through the construction of roads and trails and the instal-

lation of proper tourist accommodations. In the road and trail development work the Alaska Road Commission has been giving close cooperation. In 1923 the commission expended \$5,000 on an entrance road from McKinley Park Station on the railroad into the park. More extensive work has been accomplished this summer, the park road having been completed to the head of Hines Creek, a distance of 6 miles. When the funds for road and trail work authorized under the national park road act become available the work planned in McKinley Park will be handled by the road commission, and so that it may tackle the work effectively and without delay surveys and special preparations have been made in the improvement of the existing pack trail.

At the present time only the hardiest travelers actually get into the park to view at close hand the magnificent scenery and the herds of wild animals for the protection of which the park was primarily created. A pack and saddle train has been operated under a permit the past two seasons, and while a chain of three camps extending 50 miles into the park was contemplated only one camp so far has been erected, that being at Savage River, 12 miles from the railroad. Here comfortable sleeping and mess arrangements have been provided for 24 persons.

Attention was called last year to the fact that there had been considerable wanton destruction of the game in the park by alleged miners and prospectors. The law creating the park provided that miners and prospectors in the park may take and kill so much game or birds as may be needed for their actual needs when short of food, but as prospecting is widespread and patrol difficult it is practically impossible to control wanton killing. During the year two prosecutions for illegal game killing were made, resulting in one conviction and one acquittal. In connection with the game situation an encouraging feature is that prospecting in the eastern portion of the park has been nearly abandoned. Aside from mineral discoveries, as of yet unknown value, made in the Copper Mountain district no important mineral deposits have been found in the park, although prospectors have covered it fairly well for years.

A devastating forest fire which burned about 30 square miles occurred during July and, owing to an extremely dry season and high wind, it was one of the most spectacular and unmanageable fires seen in years. While none of the park buildings at headquarters were destroyed, three-quarters of a mile of timber along the new highway was destroyed, leaving an ugly scar that will remain for years. With portable fire-fighting equipment similar to that maintained by the Canadian Park Service this fire could have been controlled before it had gained much headway.

#### ZION NATIONAL PARK, UTAH

Stimulated by the visit of the late President Harding to Zion Park early in the summer of 1923, the attention of the traveling public was particularly directed to this gorgeously colored section of southern Utah and travel this summer has largely exceeded that of previous years. Many notable visitors have been in the park and classes from several colleges have made it their summer study room.



*New camp development under way*

The development of tourist accommodations and facilities in the park by the Utah Parks Co. has not progressed as rapidly as was expected largely by reason of the disapproval of their plans for the construction of a large hotel on the floor of Zion Canyon. I was never favorable to this project, and although plans drawn for the proposed hotel were approved by the Fine Arts Commission I felt that the construction of a large hotel in the canyon was not the proper development. I am glad to say the construction of the hotel was abandoned and instead an ample central building with cottages for sleeping quarters conveniently located near by are now being constructed. The new camp development now well under way should be ready by the opening of the 1925 season. The present camp was operated very satisfactorily this year and its management assures exceptionally good tourist accommodations for next year. The new hotel at Cedar City, the starting point of southern Utah trips, was placed in operation this year and is a notable improvement. The Utah Parks Co. is also undertaking the development of tourist accommodations at the Cedar Breaks area and within the Bryce Canyon National Monument, elevation of which to national park status has been provided for by act of Congress when all alienated lands within the area are first secured for the United States. Improved transportation facilities also may be recorded this year, these being conducted by the Utah-Arizona Parks Transportation Co. under an agreement with the Utah Parks Co.

*Notable road and trail improvements*

With the deficiency appropriation for 1923 and 1924 for road and trail construction, signal progress has been made in the development of roads and trails in Zion Park. The road from the park entrance to the public camp was entirely reconstructed and has been in use all the season. From the public camp to Cable Mountain  $1\frac{1}{2}$  miles of new road have been completed, and from this point to the Temple of Sinawava, where the road will end a short distance below the Narrows, the road is now under construction and will be completed for travel its entire length next season. This road work includes the construction of five new bridges on the road from park entrance to Cable Mountain. The bridge at Rockville spanning the Virgin River, also provided for in the deficiency appropriation, is nearing completion. The construction of this bridge makes possible the Zion Park-North Rim of Grand Canyon Cut-off Road, which will shorten the distance between these two points about 30 miles. The Utah and Southern California Automobile Associations, cooperating, have placed metal direction signs along the highways leading to the park from southern California and from Salt Lake City, Utah. The most notable improvement in Zion Park, however, has been the remarkable trail construction that has been accomplished. The West Rim Trail,  $4\frac{1}{2}$  miles in length with a 9-mile loop on top of the west rim, is perhaps one of the most scenic trails in the national park system. The Lady Mountain Footpath, 2 miles in length, has over 1,400 steps chiseled out of the rock, two ladders, and 2,000 feet of



hand cable. It is a spectacular foot trail and the views from the summit of Lady Mountain are especially magnificent. A third new trail known as the Highline Trail, 1½ miles in length, has been constructed and the East Rim Trail rebuilt in the most difficult places during the year. This new construction is destined to bring fame to Zion as a wonderful trail park.

*Circle trip to be popular*

With further road improvement, which is slowly but steadily going forward in southern Utah and in the Arizona strip north of the Grand Canyon, Utah's scenic attractions combined with the north rim of the Grand Canyon National Park, are becoming more readily accessible. When the beauty, variety, and colorfulness of these attractions become better known I predict there will be no more popular tourist trip than this in America.

**LASSEN VOLCANIC NATIONAL PARK, CALIF.**

Mount Lassen, the active volcano that is the main feature of this park, was quiet during the year. At one time during August it showed symptoms of activity when an unusually large volume of steam and vapor arose from it, but this disappeared almost at once and was followed by normal conditions.

It is unfortunate that shortage of funds made it impracticable to undertake the development of Lassen Volcanic National Park this year, as it is an important link in the chain of national parks along the Pacific Coast. Road location surveys have been made, however, so that when the road budget is made available work can be undertaken on the road system.

*Topographic map now being prepared*

The mapping of this park has been undertaken by the United States Geological Survey and some preliminary work done this year. Next year the survey of the area will be completed, so that copies of the finished topographic map may be available by 1925. This map will be invaluable in proceeding with the development work it is hoped shortly to undertake in the park, and the cooperation of the Geological Survey in giving this work priority is greatly appreciated.

*Elimination of private holdings important*

One of the problems to be solved when the Service begins actively to administer the area is that of private holdings, of which there are a number in the park. It is felt that an effort should be made to acquire these holdings as soon as possible, exchanging for them lands of approximately equal area and size outside the park. Our tentative development plans include work on the west side of the park only, where the roads can be built entirely on public lands.

*Cattle grazing detrimental*

The service has been permitting grazing in Lassen Volcanic Park to take care of the overflow from the adjoining national forest. A point has been reached, however, where it is vitally necessary to limit

this grazing, or eliminate it entirely, if the plant and animal life of the park is to be saved. Reports have been received from one of our field officials that the land is already overgrazed, so that little forage is left to sustain the wild life indigenous to the area, which forms one of the great attractions of a national park. If this condition continues the vegetation will be killed and it will take years to bring the meadows back to their normal condition.

### *Increase in travel*

In spite of the lack of roads and of tourist facilities in the park, the number of visitors to the area has increased greatly this year. There is little doubt that when the necessary development of the area has been undertaken a far greater number of visitors will be recorded.

### *Word of appreciation*

The cooperation of the Lassen Volcanic National Park Association in promoting the interests of the park, at this time when the service, because of lack of funds, is handicapped in its efforts to care for the park, is greatly appreciated. I sincerely hope that this interest will continue, even after a definite local park administration has been installed.

## **WIND CAVE NATIONAL PARK, S. DAK.**

Again this season the most outstanding feature in Wind Cave National Park was the remarkable increase in number of visitors despite the unfavorable economic conditions obtaining throughout the Northwest.

The most striking characteristic that elicited no small amount of adverse comment from visitors was the very poor condition of the park road, which condition was emphasized by the fact that visitors passed over liberally wide, gravel-surfaced roads on all sides of the park. Practically all of the approach roads to the park have been or are being reconstructed or surfaced. It was impossible to make any extensive repairs or improvements to the park road because of the failure of the general road budget.

The protection force at the park was inadequate to meet the demands of the increased numbers of visitors, and the lighting equipment for the cave does not now meet the requirements satisfactorily. It is urgently necessary that funds be provided for a good road, an electric lighting system for the cave, some additional buildings, and some other much-needed equipment, tools, and machinery. Watering and camping facilities at the park were taxed to their limit during the season, and it is reasonable to expect a steady increase of visitors from year to year. The number has more than doubled during the past five years.

## **PLATT NATIONAL PARK, OKLA.**

Platt is an all-the-year park and while the season proper runs during the summer months there are always campers and visitors all through the year.



On July 4 over 20,000 people visited the Bromide Springs and drank of the medicinal waters. Records show that 539,495 persons entered the park gates, but as many of them undoubtedly repeated their visits from day to day 134,874 individuals is considered a fair estimate of travel. The park is gaining in favor as a health and pleasure resort with each succeeding season.

Very little in the way of improvements could be done owing to the limited appropriation. Notwithstanding its area, water, accessibility, and large travel Platt has never received an adequate appropriation. The increasing popularity of the park demands a larger appropriation for the extension of the camp grounds, sewer lines, water and light systems, for the erection of more toilet facilities and for more help and equipment. The park roads are entirely too narrow and need to be widened, graded, and resurfaced to safely and comfortably accommodate the tremendously increased traffic in the park.

#### SULLYS HILL NATIONAL PARK, N. DAK.

Sullys Hill, a small park, is not actively administered by the National Park Service. The reservation is utilized primarily as a game preserve by the Bureau of Biological Survey, Department of Agriculture, and as such is an important factor in preserving the wild life indigenous of the region. The park serves local recreational purposes and its principal need is a good approach road. The present trails to the park are exceedingly poor, are hard on autos, and discourage persons from visiting the park. A Federal aid highway has been projected to and through the park, a permit having been issued by the service to the State highway commission for the construction of the road through the park. Completion of this road will, it is expected, greatly increase travel to the park. The area is not of national park caliber, however, and in my judgment its designation as such should be ended and its elimination from the national park system and transfer to the Department of Agriculture as a game preserve recognized and accomplished by appropriate legislation.

#### THE NATIONAL MONUMENTS

The outstanding feature of the administration of the national monuments during the past year was the designation of Custodian Frank Pinkley, of Casa Grande and Tumacacori National Monuments, to the position of Superintendent of Southwestern Monuments. Under this arrangement Mr. Pinkley has general supervision over the Aztec Ruin, Capulin Mountain, Carlsbad Cave, Chaco Canyon, El Morro, Gran Quivira, Montezuma Castle, Natural Bridges, Navajo, Petrified Forest, Pipe Springs, and Rainbow Bridge National Monuments, in addition to his custodial work at the Casa Grande and Tumacacori. Having a local superintendent has greatly simplified the handling of monument affairs in the Southwest and has relieved this office of much detail work.

An appropriation of \$5,000 was made for general repairs to the historic and prehistoric ruins on the monuments that were slowly disintegrating under the action of the elements, and repair work has been carried on during the summer at Casa Grande, Tumacacori,



Gran Quivira, and Aztec Ruin. Important repair work at Chaco Canyon will be undertaken early next year. A similar amount has been included in the estimates for 1926, and if funds are made available to carry on the necessary restoration work progressively all the important monument ruins will be placed in condition to insure their being handed down to posterity.

The custodians of the Muir Woods and Pinnacles National Monuments in California both reported successful seasons.

The board of road commissioners in Alaska and the Territory cooperated with the Park Service in providing funds for certain necessary repair and maintenance work in the Sitka National Monument. The work was done under the supervision of the road commission.

### LEGISLATION

The following is a brief summary of legislation affecting the national parks considered in Congress since the preparation of the seventh annual report. The text of new laws will be found in Appendix D of the report.

#### *Bills enacted into law*

The deficiency act of April 2, 1924<sup>1</sup>, carried an item of \$27,700 for repairing damage caused by flood washouts to roads, bridges, and retaining walls in Yellowstone National Park, and to the road leading out of the park from the east boundary.

H. R. 3682<sup>2</sup>, entitled "An act authorizing the construction, reconstruction, and improvement of roads and trails, inclusive of necessary bridges, in the national parks and monuments under the jurisdiction of the Department of the Interior," which was approved April 9, 1924, authorized appropriations of \$2,500,000 annually for the three-year period ending June 30, 1927, for road and trail construction in the national parks and monuments. No funds were provided by this act.

H. R. 2713<sup>3</sup>, signed by the President June 2, 1924, entitled "An act to transfer certain lands of the United States from the Rocky Mountain National Park to the Colorado National Forest, Colorado," eliminated from the Rocky Mountain National Park an area of 345 acres immediately on the northwest boundary which was needed in connection with the construction of the Grand River reservoir in the adjoining Colorado National Forest.

H. R. 4985<sup>4</sup>, approved June 5, 1924, entitled "An act to repeal the first proviso of section 4 of an act to establish a national park in the Territory of Hawaii, approved August 1, 1916," repealed the inhibition on annual appropriations of more than \$10,000 for Hawaii National Park.

The Interior Department appropriation act of June 5, 1924<sup>5</sup>, carried appropriations of \$1,877,835 for the National Park Service in Washington and for the administration, protection, maintenance, and improvement of the various national parks and monuments.

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<sup>1</sup> Public No. 66, 68th Cong.

<sup>2</sup> Public No. 70, 68th Cong. See p. 153.

<sup>3</sup> Public No. 172, 68th Cong. See p. 153.

<sup>4</sup> Public No. 198, 68th Cong. See p. 154.

<sup>5</sup> Public No. 199, 68th Cong. See p. 154.

S. 668<sup>6</sup>, approved June 7, 1924, entitled "An act to establish the Utah National Park in the State of Utah," provided that the Bryce Canyon National Monument be given national park status when all private property within the exterior boundaries of the proposed park shall have become the property of the United States.

S. 1987<sup>7</sup>, signed by the President June 7, 1924, entitled "An act accepting certain tracts of land in the city of Medford, Jackson county, Oregon," provided for the acceptance by the United States of two lots offered by the city of Medford as sites for a residence for the superintendent of Crater Lake National Park, with attached office, and for a warehouse for the storage of park supplies and equipment.

*Bills introduced but not enacted before the close of the last session*

The second general deficiency bill, which failed to pass in the closing hours of the last session, carried the following appropriations for the National Park Service:

Personal services in the District of Columbia-----	\$27, 000
Mesa Verde National Park, on account of flood damage-----	3, 000
Mount Rainier National Park, on account of flood damage-----	13, 000
Rocky Mountain National Park, on account of flood damage-----	26, 171
Road construction, under \$7,500,000 authorization of Congress-----	1, 000, 000
	<hr/> 1, 069, 171

The failure of this bill was a severe blow to the service, and it is earnestly hoped that when Congress convenes in December measures may be taken to pass it immediately.

A new bill, S. 4095, to enlarge Sequoia National Park by the addition of Mount Whitney and portions of the Kings and Kern River Canyons, was introduced, but no action was taken upon it.

Bills were introduced for the creation of the following national parks: Mount Katahdin, Me., Killdeer Mountain, N. Dak., Roosevelt, N. Dak., Mammoth Cave, Ky., Mississippi Valley, Iowa-Wis., Wonderland, S. Dak., Nicolet, Wis., Grand Coulee and Yakima, Wash., Peel, Ark., Smoky Mountain, Tenn.-N. C., Mena, Ark., and Ozark, Mo., and also for other national parks in the States of Virginia, Pennsylvania, Georgia, and Texas, and one in the three States of Kentucky, Tennessee, and Virginia. A bill was also introduced for the establishment of the Battle of the Bear's Paw National Monument, Montana.

Other pending measures of interest to the Park Service propose the appropriation of \$22,500 for the protection and improvement of Lassen Volcanic National Park, making revenues received from national parks and monuments available for improvements in the respective parks and monuments, appropriating funds for the construction of roads in the Sevier National Forest, the Kaibab National Forest, and the Grand Canyon National Park, appropriating funds for the construction of roads and bridges on the north approach to and within the Petrified Forest National Monument, authorizing the construction of approach roads to the national parks and monuments, providing \$5,000 for protecting the Dinosaur National Monu-

<sup>6</sup> Public No. 227, 68th Cong. See p. 157.

<sup>7</sup> Public No. 239, 68th Cong. See p. 157.



ment and excavating the fossil remains of a dinosaur for exhibition at the monument, for constructing, reconstructing, and improving the Gardiner-Livingston Road, the northern approach to Yellowstone Park, authorizing the exchange of lands in Glacier National Park, transferring certain lands of Yosemite National Park to the Sierra National Forest for reservoir purposes, establishing an auxiliary fish-cultural station in Yellowstone National Park, and repealing the inhibition on appropriations for maintenance of more than \$10,000 annually for Mount McKinley National Park.

Two bills of especial interest to conservationists that are now pending are S. 311, "A bill for the erection and maintenance of a regulating weir across the Yellowstone River in the State of Montana," and S. 313, "A bill authorizing the Secretary of the Interior to cause to be made a survey of the shore of Yellowstone Lake, in Yellowstone National Park."

Joint resolutions were also introduced authorizing the appropriation of \$10,000 for the investigation of the possibility and cost of securing lands in the Southern Appalachian Mountains suitable for national park purposes, and changing the name of Mount Rainier to Mount Tacoma and to Mount Lincoln. The resolution to change the name of Mount Rainier to Mount Tacoma passed the Senate, but not the House.

H. R. 6133, while not mentioning national parks, provides that in the case of any State containing unappropriated public lands in which the population, as shown by the latest available census, does not exceed 10 per square mile of area, the proportion payable by the United States of the cost of construction or reconstruction of any primary or interstate highway embraced in the system of Federal-aid highways may be increased to any percentage up to and including the whole cost thereof, upon request to the Secretary of Agriculture from the State highway department of such State. This will of course affect approach roads to the national parks.

### PRESIDENTIAL PROCLAMATIONS

Presidential proclamations affecting national monuments were issued as follows:

October 25, 1923,<sup>8</sup> creating the Carlsbad Cave National Monument, N. Mex., which was placed under the jurisdiction of the Department of the Interior.

April 18, 1924,<sup>9</sup> creating the Chiricahua National Monument, Ariz., which was placed under the jurisdiction of the Department of Agriculture.

May 2, 1924,<sup>10</sup> creating the Craters of the Moon National Monument, Idaho, which was placed under the jurisdiction of the Department of the Interior.

July 2, 1924,<sup>11</sup> increasing the area of the Pinnacles National Monument, Calif.

<sup>8</sup> No. 1679. See p. 158.  
<sup>9</sup> No. 1692. See p. 158.

<sup>10</sup> No. 1694. See p. 160.  
<sup>11</sup> No. 1704. See p. 159.



## EXECUTIVE ORDERS

Executive orders affecting national parks and national monuments were issued as follows:

January 21, 1924,<sup>12</sup> withdrawal of lands in Alaska pending legislation. These lands are needed for use in the administration of Mount McKinley National Park.

March 22, 1924,<sup>13</sup> withdrawing public lands on Isle Royale, Michigan, pending determination as to the advisability of including such lands in a national monument.

April 1, 1924,<sup>14</sup> withdrawal of lands in Alaska pending determination of advisability of establishing Glacier Bay National Monument.

April 2, 1924,<sup>15</sup> withdrawals of land pending determination as to the advisability of enlarging area of the Carlsbad Cave National Monument.

April 25, 1924,<sup>16</sup> withdrawal of land pending legislation. This land is needed in connection with the administration of the Grand Canyon National Park.

May 9, 1924,<sup>17</sup> modifying proclamation of December 12, 1919 (No. 1547), establishing the Scotts Bluff National Monument by eliminating from this reservation certain sections, thus reducing the area of the monument to 1,893.83 acres.

## CONCLUSION

This concludes my report of the operations and accomplishments of the National Park Service for the travel year 1924, with incidental observations on other matters of pertinent interest. I am confident you will consider the showing a satisfactory demonstration that our great national park system is effectively serving as the recreation grounds for the Nation. The heavy attendance points a healthful redirection of public interest toward larger use of the outdoors that will have its returns in the enrichment of every phase of our American life and manner of living. It has been the pleasure and duty of the National Park Service to serve the public that has been invited as guests of the Republic to these wonder areas, and I believe that our efforts have met with general approbation. No more pleasing expression of appreciation has come to me than in a letter I recently received from a world traveler, who writes:

We visited the parks as a finishing touch of our tour around the world, and it was a real finish, I assure you. We saw nothing like them anywhere, and I question if they are equaled anywhere. It was a real homecoming to talk and ride in our playgrounds where men of far vision have laid deep and abiding plans for the future recreation of our people in keeping with the highest ideals of our generation. Such a relief from the narrow, contracted ideas of the Orient, where untold generations have laid heavy hands on every inch of territory!

<sup>12</sup> No. 3946. See p. 161.

<sup>13</sup> No. 3976. See p. 161.

<sup>14</sup> No. 3983. See p. 161.

<sup>15</sup> No. 3984. See p. 162.

<sup>16</sup> No. 3999. See p. 162.

<sup>17</sup> No. 4008. See p. 162.

I have visited 13 national parks, including 4 of the Canadian national park system, this season, and in all I have found only the most enthusiastic approbation on the part of the tourists. We must continue our efforts, however, to make the parks more comfortable and useful for all our guests. Because of financial limitations we have not been able to build as quickly or as well as we desire, having had to mark time with many important improvements. We are keenly aware of the needs of the national parks, and at times it is quite discouraging that we can not at once do the things necessary to operate them on what we know should be the proper standard. Larger use of the parks inevitably requires expansion of activities and facilities. In that larger development the most urgent needs are reconstruction of existing roads and bridges which have for years been subjected to heavy wear from the motor travel going over them, expansion of the public camping grounds, and installation of modern sanitation at points where large numbers of people congregate. Granted adequate funds for these purposes I am confident that we could, with our efficient forces, raise them within three years to the standard that should mark the maintenance and administration of the national parks system of the United States as the leader of the countries of the world in this splendid development of national outdoor recreation.

But even with these things to be accomplished we find that Americans are testifying in enthusiastic, commendatory manner to the potency of our parks as places of rest and recreation, and this magnificent demonstration proves the soundness and reality of the work in which the National Park Service, under your direction, is engaged.

STEPHEN T. MATHER, *Director.*

## APPENDIX A

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### THE NATIONAL PARKS AND MONUMENTS

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## NATIONAL PARKS ADMINISTERED BY THE NATIONAL PARK SERVICE, DEPARTMENT OF THE INTERIOR

[Number, 19; total area, 11,372 square miles, or 7,277,709.45 acres; chronologically in order of creation]

Name	Location	Nearest rail stations	When established	Statute reference	Area (square miles)	Area (acres)	Private lands (acres)	Special characteristics
Hot Springs-----	Middle Arkansas-----	{Hot Springs, Rock Island and Missouri Pacific Systems.	{Apr. 20, 1892	{4 Stat., 505----- 21 Stat., 288----- 41 Stat., 1407-----		911.63	None.	{46 hot springs possessing curative properties—Many hotels and boarding houses—20 bathhouses under public control.
Yellowstone-----	Wyoming, Montana, and Idaho.	Gardiner, Mont.; Northern Pacific; West Yellowstone, Mont., Union Pacific; Cody, Wyo., Burlington Route; Lander, Wyo., Chicago & North Western.	Mar. 1, 1872	17 Stat., 32, 33-----	1 3, 348	2, 142, 720	None.	More geysers than in all rest of world together—Boiling springs—Mud volcanoes—Petrified forests—Grand Canyon of the Yellowstone, remarkable for gorgeous coloring—Large lakes—Water falls—Vast wilderness inhabited by deer, elk, bison, moose, antelope, bear, mountain sheep, etc.—Greatest wild bird and animal preserve in world.
Sequoia (sé-kwoi'-á)-----	Middle eastern California.	Exeter or Visalia, Santa Fe and Southern Pacific; thence Visalia Electric to Lemon Cove.	Sept. 25, 1890	26 Stat., 478, 650.	252	161, 597	1, 400	The Big Tree National Park—Several hundred Sequoia trees over 10 feet in diameter, some 25 to 36 feet in diameter—Towering mountain ranges—Startling precipices—Mile-long cave of delicate beauty—Fine trout fishing. Valley of world-famed beauty—Lofty cliffs—Romantic vistas—Waterfalls of extraordinary height—3 groves of big trees—Large areas of snowy peaks—Water wheel Falls—Good trout fishing.
Yosemite (yó-sēm'-i-té)-----	do-----	{Merced, Southern Pacific and Santa Fe; thence Yosemite Valley R. R. to El Portal.	{Oct. 1, 1890	{26 Stat., 650----- 33 Stat., 702----- 34 Stat., 831-----	1, 125	719, 802.4	10, 959.89	Created to preserve the celebrated General Grant Tree, 35 feet in diameter—6 miles from Sequoia National Park.
General Grant-----	do-----	Fresno, Sanger, or Visalia, Santa Fe and Southern Pacific.	do-----	26 Stat., 650-----	4	2, 536	160	Largest accessible, single peak glacier system—28 glaciers, some of large size—48 square miles of glacier, 50 to 500 feet thick—Wonderful subalpine wild-flower fields.
Mount Rainier (rā-nār')-----	West central Washington.	Ashford, Chicago, Milwaukee & St. Paul.	Mar. 2, 1899	30 Stat., 993-----	324	207, 360	18.2	Lake of extraordinary blue in crater of extinct volcano, no inlet, no outlet—Sides 1,000 feet high—interesting lava formations—Fine fishing.
Crater Lake-----	Southern Oregon-----	Medford or Klamath Falls, Southern Pacific.	May 22, 1902	32 Stat., 202-----	249	159, 360	1, 949.21	

Wind cave.....	South Dakota.....	Jan. 9, 1903	32 Stat., 765.....	17	10,899.22	None.	Cavern having many miles of galleries and numerous chambers of considerable size containing many peculiar formations.
Platt.....	Southern Oklahoma.....	July 1, 1902	32 Stat., 641, 655.....	11½	848.22	None.	{ Many sulphur and other springs possessing medicinal value.
Sullys Hill.....	North Dakota.....	Apr. 21, 1904	33 Stat., 220.....	1½	780	None.	{ Small park with woods, streams, and a lake—is an important wild-animal preserve.
Mesa Verde (má'sa vér'dá).	Southwestern Colorado.....	June 29, 1906	34 Stat., 616.....	77	48,966.4	993	{ Most notable and best preserved, prehistoric cliff dwellings in United States; if not in the world.
Glacier (glá'shér).....	Northwestern Montana.....	June 30, 1913	38 Stat., 82, 83, 84.....	1,534	981,681	15,923.24	{ Rugged mountain region of unsurpassed Alpine character—250 glacier-fed lakes of romantic beauty—60 small glaciers—Precipices thousands of feet deep—Almost sensational scenery of marked individuality—Fine trout fishing.
Rocky Mountain.....	{ North middle Colorado.....	Jan. 26, 1915	38 Stat., 798.....	397	253,982	220,593	{ Heart of the Rockies—Snowy range, peaks 11,000 to 14,255 feet altitude—Remarkable records of glacial period.
		Feb. 14, 1917	39 Stat., 916.....				
		June 2, 1924	68th Cong.: Public No. 172				
Hawaii (há-wíé).....	Hawaiian Islands.....	Aug. 1, 1916	39 Stat., 432.....	186	118,695	241,000	{ 3 separate areas: 2—Kilauea, continuously active for century and section of interesting Kau Desert, and Mauna Loa, altitude 13,675 (largest active volcano in world, erupting every decade)—are on Hawaii; Haleakala, on Maui, 10,000 feet high, with tremendous rift in summit 8 miles across and 3,000 feet deep; contains many cones, gorgeous tropical forests; mahogany groves, and lava caves. erupted 200 years ago.
		May 1, 1922	42 Stat., Public No. 208.				

<sup>1</sup> In Wyoming, 3,114 square miles; in Montana, 198 square miles; in Idaho, 36 square miles.

<sup>2</sup> Estimated.

## National parks administered by the National Park Service, Department of the Interior—Continued

Name	Location	Nearest rail stations	When established	Statute reference	Area (square miles)	Area (acres)	Private lands (acres)	Special characteristics
Lassen Volcanic (lăs'ën)	Northern California.	Red Bluff, Southern Pacific; Paxton, Western Pacific.	Aug. 9, 1916	39 Stat., 442-----	124	79,561.58	2,955	Only active volcano in United States proper—Lassen Peak, 10,465 feet in altitude—Cinder Cone, 6,879 feet—Hot Springs—Mud geysers—Ice caves—Majestic canyons—Numerous lakes—Fine forests.
Mount McKinley-----	South central Alaska	McKinley Park Station, United States Alaska Railroad.	{ Feb. 26, 1917 Jan. 30, 1922	{ 39 Stat., 938----- 42 Stat., Public No. 133.	{ 2,645	{ 1,692,800	{ None.	{ Highest mountain in North America (altitude 20,300 feet)—Rises higher above surrounding country than any other mountain in world.
Grand Canyon <sup>3</sup> -----	North central Arizona.	{ Grand Canyon Station, Santa Fe System; North Rim motor stage from Lund, Utah, Union Pacific; or from Marysville, Utah, Denver & Rio Grand Western. { Mount Desert Ferry, Maine Central System.	{ Jan. 11, 1908 Feb. 26, 1919	{ 35 Stat., 2175----- 40 Stat., 1175-----	{ 958	{ 613,120	{ 1,057.99	{ The greatest example of erosion and the most sublime spectacle in the world.
Lafayette <sup>4</sup> -----	Maine coast-----	{	{ July 8, 1916 Feb. 26, 1919	{ 39 Stat., 1785----- 40 Stat., 1178-----	{ 8	{ 5,289	{ None.	{ The group of granite mountains upon Mount Desert Island.
Zion <sup>5</sup> -----	Southwestern Utah.	{ Lund, Union Pacific System.	{ July 31, 1909 Mar. 18, 1918 { Nov. 19, 1919	{ 36 Stat., 2498----- 40 Stat., 1760----- 41 Stat., 356-----	{ 120	{ 76,800	{ 2,817.72	{ Magnificent gorge (Zion Canyon), depth from 800 to 2,000 feet, with precipitous walls—Of great beauty and scenic interest.

<sup>3</sup> Formerly Grand Canyon National Monument.<sup>4</sup> Formerly Sieur de Monts National Monument; donated to the United States.<sup>5</sup> Formerly Zion National Monument.



## THE NATIONAL MILITARY AND OTHER PARKS ADMINISTERED BY THE WAR DEPARTMENT

[Number, 7; total area, 22 square miles or 14,038 acres; chronologically in order of creation]

Name	Location	Approaches	When established	Statute reference	Area (acres)	Special characteristics
Chickamauga and Chattanooga	Georgia and Tennessee	Chattanooga, several southern roads.	Aug. 19, 1890	26 Stat., 333, 978.	6, 543	Beautiful natural park—Embraces battle fields of Chickamauga and Missionary Ridge and scenes of other conflicts of the Civil War fought in the vicinity of Chattanooga during 1863.
Antietam Battle Field	Maryland	Antietam, Norfolk & Western.	Aug. 30, 1890	26 Stat., 401	50	Scene of one of the greatest battles of the Civil War.
Shiloh	Tennessee	Corinth, Miss., Illinois Central, and Southern.	Dec. 27, 1894	28 Stat., 597	3, 546	Natural park embracing the battle field of Shiloh near Pittsburg Landing.
Gettysburg <sup>1</sup>	Pennsylvania	Gettysburg, Philadelphia & Reading, and Western Maryland.	Feb. 11, 1895	28 Stat., 651	2, 451	Beautiful natural park—Scene of Civil War combat—Probably better marked than any other battle field in the world.
Vicksburg	Mississippi	Vicksburg, Alabama & Vicksburg, Shreveport & Pacific, and Yazoo & Mississippi Valley.	Feb. 21, 1899	30 Stat., 841	1, 323	Beautiful natural park—Scene of the siege and surrender of Vicksburg in 1863 during the Civil War.
Lincoln's Birthplace <sup>1</sup>	Kentucky	Hodenville, Illinois Central.	July 17, 1916	39 Stat., 385	-----	Contains the log cabin and part of the farm where Abraham Lincoln was born.
Guilford Courthouse	North Carolina	Greensboro, Southern, and Atlantic & Yadkin.	Mar. 2, 1917	39 Stat., 996	125	Near Greensboro—Scene of one of the great battles of the Revolution; fought in 1781.

<sup>1</sup> Donated in whole or in part to the United States.

## THE NATIONAL MONUMENTS

## ADMINISTERED BY THE NATIONAL PARK SERVICE, DEPARTMENT OF THE INTERIOR

[Number, 30; total area, 1,857.83 square miles or 1,189,010.21 acres; chronologically in order of creation]

Name	Location	Approaches	Date of creation	Statute reference of proclamation	Area (acres)	Special characteristics
Devils Tower.....	Wyoming.....	Moorecroft, Burlington Route.	Sept. 24, 1906	34 Stat., 3236.....	1, 152	Remarkable natural rock tower, of volcanic origin, 1,200 feet in height.
Montezuma Castle.....	Arizona.....	Clarkdale, Santa Fe System.	Dec. 8, 1906	34 Stat., 3265.....	1 160	Prehistoric cliff-dwelling ruin of unusual size situated in a niche in face of a vertical cliff. Of scenic and ethnologic interest.
El Morro.....	New Mexico.....	{Gallup or Thoreau, Santa Fe System.	Dec. 8, 1906 June 18, 1917	34 Stat., 3264..... 40 Stat., 1673.....	240	{Enormous sandstone rock eroded in form of a castle, upon which inscriptions have been placed by early Spanish explorers. Contains cliff-dweller ruins. Of great historic, scenic, and ethnologic interest.
Petrified Forest.....	Arizona.....	{Adamana or Holbrook, Santa Fe System.	Dec. 8, 1906 July 31, 1911	34 Stat., 3266..... 37 Stat., 1716.....	25, 625	{A abundance of petrified coniferous trees, one of which forms a small natural bridge. Is of great scientific interest.
Chaco Canyon (ch'á'kó).....	New Mexico.....	Thoreau, Santa Fe System.	Mar. 11, 1907	35 Stat., 2119.....	1 20, 629	Numerous cliff-dweller ruins, including communal houses, in good condition and but little excavated.
Muir Woods <sup>2</sup> (mūr).....	California.....	{Ferry from San Francisco, thence Mount Tamalpais & Muir Woods R. R.	Jan. 9, 1908 {Sept. 22, 1921	{35 Stat., 2174..... {42 Stat., Proc., 1608.	426. 43	{One of the most noted redwood groves in California, and was donated by Hon. William Kent, ex-Member of Congress. Located 7 miles from San Francisco.
Pinnacles.....	do.....	{Soledad or Hollister, Southern Pacific.	Jan. 16, 1908 May 7, 1923	35 Stat., 2177..... 42 Stat., Proc., 1660.	2, 980 26	{Many spire-like rock formations, 600 to 1,000 feet high, visible many miles; also numerous caves and other formations.
Natural Bridges.....	Utah.....	{Pack trip from Blanding, Utah, reached by stage from Thompson, Utah, or Mancos, Colo., stations on Denver & Rio Grande Western.	July 2, 1924	Proc., 1704.....		{3 natural bridges, among largest examples of their kind. Largest bridge is 222 feet high, 65 feet thick at top of arch; arch is 28 feet wide; span 261 feet; height of span, 157 feet. Other two slightly smaller.
Lewis and Clark Cavern <sup>2</sup> .....	Montana.....	Temporarily closed to public.	Apr. 16, 1908 {Sept. 25, 1909 Feb. 11, 1916	35 Stat., 2183..... 36 Stat., 2502..... 39 Stat., 1764.....	1 2, 740	{Immense limestone cavern of great scientific interest, magnificently decorated with stalactite formations. Now closed to public because of depredations by vandals.
Tumacacori (tū-mā-kā-kō-ré).....	Arizona.....	Tucson, Southern Pacific, and El Paso & Southern.	{May 11, 1908 {May 16, 1911	35 Stat., 2187..... 37 Stat., 1679.....	160	{Ruin of Franciscan mission dating from seventeenth century. Being restored by National Park Service as rapidly as funds permit.
Navajo (nāv'á-hó).....	do.....	{Gallup, N. Mex., or Flagstaff, Ariz., Santa Fe System.	Sept. 15, 1908	35 Stat., 2205.....	10	{Numerous pueblo, or cliff-dweller ruins, in good preservation.
Shoshone Cavern (shó-shó'né).....	Wyoming.....	Cody, Burlington Route.....	Mar. 20, 1909 {Mar. 14, 1912	36 Stat., 2491..... 37 Stat., 1733.....	1 360	{Cavern of considerable extent, near Cody.
Gran Quivira (grān kē-vē'rā).....	New Mexico.....	{Mountainair, Santa Fe System.	Sept. 21, 1909 Nov. 1, 1909 Nov. 25, 1919	36 Stat., 2501..... 36 Stat., 2503..... 41 Stat., 1778.....	210 1 560	{One of the most important of earliest Spanish mission ruins in the Southwest. Monument also contains pueblo ruins.

Sitka.....	Alaska.....	Port of call for steamships from Seattle.	Mar. 23, 1910	36 Stat., 2601.....	1 57	Park of great natural beauty and historic interest, as scene of massacre of Russians by Indians. Contains 16 totem poles of best native workmanship. Unique natural bridge of great scientific interest and symmetry. Height 309 feet above water, and span is 278 feet, in shape of rainbow.
Rainbow Bridge.....	Utah.....	Pack trip from Kayenta, Ariz., reached from Gallup, N. Mex., or Flagstaff, Ariz., Santa Fe System. Grand Junction, Denver & Rio Grande Western.	May 30, 1910	36 Stat., 2703.....	160	Many lofty monoliths, and is wonderful example of erosion, and of great scenic beauty and interest.
Colorado.....	Colorado.....		May 24, 1911	37 Stat., 1681.....	13, 883	{ Splendid collection of characteristic desert flora and numerous pictographs. Interesting rock formations. Deposits of fossil remains of prehistoric animal life of great scientific interest. Chinder cone of geologically recent formation.
Papago Saguaro (pá'pá-gó-sá-gwá-ró). Dinosaur (dí'nó-sór).....	Arizona.....	{ Phoenix or Tempe, Southern Pacific. Watson, Uintah Railway.....	Jan. 31, 1914 Dec. 28, 1922	{ 38 Stat., 1991 Ex. Order No. 3769.	1, 940. 43	
Capulin Mountain (ká'pū-lín) Verendrye (vēr-rón-drē).....	Utah.....		Oct. 4, 1915	39 Stat., 1752.....	80	
	New Mexico.....	Folsom, Colorado & Southern.	Aug. 9, 1916	37 Stat., 1792.....	681	
	North Dakota.....	Samish, Soo Line.....	June 20, 1917	40 Stat., 1677.....	253. 04	
Casa Grande (ká'sá grán'dé).	Arizona.....	{ Casa Grande, Southern Pacific. cific.	{ Mar. 2, 1889 <sup>3</sup> Dec. 10, 1909 Aug. 3, 1918	{ 25 Stat., 961 36 Stat., 2504 40 Stat., 1818	480	{ Includes Crowhigh Butte, peculiar mountain formation, from which Explorer Verendrye first beheld territory beyond Missouri River. { These ruins are one of the most noteworthy relics of a prehistoric age and people within the limits of the United States. Discovered in ruinous condition in 1694.
Katmai (ká'mí).....	Alaska.....	{ Sailing vessel from Kodiak, reached by steamship from Seattle.	{ Sept. 24, 1918 Sept. 5, 1923	{ 40 Stat., 1855 Ex. Order No. 3897.	1,087,990	{ Wonderland of great scientific interest in the study of volcanism. Phenomena exist upon a scale of great magnitude. Includes "Valley of Ten Thousand Smokes".
Scotts Bluff.....	Nebraska.....	Gering, Union Pacific.....	{ Dec. 12, 1919 May 9, 1924	{ 41 Stat., 1779 Ex. Order No. 4008.	1, 893. 83	{ Region of historic and scientific interest. Many famous old trails traversed by the early pioneers in the winning of the West passed over and through this monument.
Yucca House <sup>2</sup> (yūc-cá).....	Colorado.....	Mancos, Denver & Rio Grande Western.	Dec. 19, 1919	41 Stat., 1781.....	9. 6	Located on eastern slope of Sleeping Ute Mountain. Ruins of great archaeological value, relic of prehistoric inhabitants.
Fossil Cycad.....	South Dakota.....	Minnekahta, C. B. & Q.....	Oct. 21, 1922	42 Stat., Proc. 1041.	320	Area containing deposits of plant fossils.
Aztec Ruin <sup>2</sup> .....	New Mexico.....	Aztec, D. & R. G. W.....	Jan. 24, 1923	42 Stat., Proc. 1650.	4. 6	Prehistoric ruin of pueblo type containing 500 rooms
Hovenweep.....	Utah-Colorado.....	Mancos, D. & R. G. W.....	Mar. 2, 1923	42 Stat., Proc. 1651.	285. 8	Four groups of prehistoric towers, pueblos and cliff dwellings.
Pipe Spring.....	Arizona.....	Cedar City and Utah, U. P.....	May 31, 1923	42 Stat., Proc. 1663.	40	Old stone fort and spring of pure water in desert region Serves as memorial to early western pioneer life.
Carlsbad Cave.....	New Mexico.....	Carlsbad, Santa Fe System.....	Oct. 25, 1923	Proc. 1679	719. 22	Limestone caverns of extraordinary proportions and of unusual beauty.
Craters of the Moon.....	Idaho.....	Arco, Oregon Short Line.....	May 2, 1924	Proc. 1694	24, 960	Weird volcanic region containing remarkable fissure eruption together with its associated volcanic cones, craters, lava flows, caves, natural bridges, and other phenomena.

1 Estimated.

2 Donated to the United States.

3 From Mar. 2, 1889, until Aug. 3, 1918, classified as a national park



# THE NATIONAL MONUMENTS—Continued

## ADMINISTERED BY THE DEPARTMENT OF AGRICULTURE

[Number, 14; total area, 529 square miles or 338,866.33 acres; chronologically in order of creation]

Name	Location	Approaches	Date of creation	Statute reference of proclamation	Area (acres)	Special characteristics
Gila Cliff Dwellings (he'ñé)	New Mexico	Silver City, via Pinos Altos, Santa Fe System.	Nov. 16, 1907	35 Stat., 2162	160	Numerous cliff-dweller ruins of much interest and in good preservation.
Tonto	Arizona	Globe, Southern Pacific.	Dec. 19, 1907	35 Stat., 2168	1 640	Limestone cavern of much beauty and considerable extent, limits of which are as yet unknown. Of much interest from geological standpoint as example of eccentric erosion and extinct volcanic action. Of much scenic beauty.
Jewel Cave	South Dakota	Custer, Burlington Route.	Feb. 7, 1908	35 Stat., 2180	1, 280	
Wheeler	Colorado	Wagon-Wheel Gap or Creede, Denver & Rio Grande Western.	Dec. 7, 1908	35 Stat., 2214	300	
Mount Olympus	Washington	{Port Angeles by ferry from Seattle.	{Mar. 2, 1909	35 Stat., 2247	{ 299, 370	{Contains many objects of great and unusual scientific interest, including many glaciers. Is summer range and breeding ground of the Olympic elk. Extensive caves in limestone formation of much beauty; magnitude not entirely ascertained.
Oregon Caves	Oregon	{Grants Pass, Southern Pacific.	{Apr. 17, 1912	37 Stat., 1737		
Devil Postpile	California	{Laws, Southern Pacific, thence stage to Mammoth.	{May 11, 1915	39 Stat., 1726		
Walnut Canyon	Arizona	Flagstaff, Santa Fe System.	July 12, 1909	36 Stat., 2497	480	Spectacular mass of hexagonal basaltic columns, like an immense pile of posts. Said to rank with famous Giant's Causeway in Ireland.
Bandelier (Bán-dé-lér)	New Mexico	Santa Fe, Santa Fe System, and Denver & Rio Grande Western.	July 6, 1911	37 Stat., 1715	800	Contains cliff dwellings of much scientific and popular interest.
Old Kasaan (ká-sán)	Alaska	Steamships, Seattle to Ketchikan.	Nov. 30, 1915	39 Stat., 1761	960	Vast number of cliff-dweller ruins, with artificial caves, stone sculpture, and other relics of prehistoric life.
Lehman Caves	Nevada	Ely, Nevada Northern.	Feb. 11, 1916	39 Stat., 1764	22, 075	A abandoned Indian village in which there are numerous remarkable totem poles and other objects of historical interest.
Timpanogos Cave	Utah	American Fork, U. P. System; D. & R. G. W.	Oct. 25, 1916	39 Stat., 1812	38. 3	Limestone caverns of much beauty and of scientific interest and importance.
Bryce Canyon	do	Cedar City, U. P. System; Marysville; D. & R. G. W.	Jan. 24, 1922	42 Stat., Proc. 1618.	593. 03	Limestone cavern.
Chiricahua	Arizona	Willcox, Southern Pacific.	Oct. 14, 1922	42 Stat., Proc. 1640.	250	Box canyon filled with countless array of fantastically eroded pinnacles. Best exhibit of vivid coloring of earth's materials.
			June 8, 1923	42 Stat., Proc. 1664.	7, 440	Natural formations known as the "Pinnacles," within Coronado National Forest.
			Apr. 18, 1924	Proc. 1692.	4, 480	

ADMINISTERED BY THE WAR DEPARTMENT

[Number, 3; total area, 63 acres; chronologically in order of creation]

Big Hole Battle Field <sup>4</sup> -----	Montana-----	Divide, Union Pacific-----	June 23, 1910	-----	5	Site of battlefield on which battle was fought Aug. 9, 1877, between a small force of United States troops and a much larger force of Nez Perce Indians, resulting in a rout for the Indians.
Cabrillo (kă-brél'yo)-----	California-----	San Diego, Southern Pacific, and Santa Fe systems.	Oct. 14, 1913	38 Stat., 1965----	1	Of historic interest because of discovery of the territory now partly embraced in the State of California by Juan Rodriguez Cabrillo, who at this point first sighted land on Sept. 28, 1542.
Mound City Group-----	Ohio-----	Chillicothe, B. & O., and N. & W.	Mar. 2, 1923	42 Stat., Proc. 1653.	57	Famous group of prehistoric mounds in Camp Sherman Military Reservation.

<sup>1</sup> Estimated.

<sup>4</sup> Set aside by Executive order.

**ORGANIZATION OF THE NATIONAL PARK SERVICE**

(Department of the Interior, Washington, D. C.)

Stephen T. Mather, director.  
 Arno B. Cammerer, assistant director.  
 A. E. Demaray, administrative assistant.  
 R. M. Holmes, chief clerk.

**FIELD SERVICE****GENERAL**

(Yellowstone Park, Wyo.)

Horace M. Albright, field assistant to the director.

**CIVIL ENGINEERING DIVISION**

(811 Couch Building, Portland, Oreg.)

George E. Goodwin, chief civil engineer.  
 Merrill F. Daum, locating engineer.

**LANDSCAPE ENGINEERING DIVISION**

(Yosemite, Calif.)

Daniel R. Hull, landscape engineer.

**THE NATIONAL PARKS**

Crater Lake, Charles Goff Thomson, superintendent, Medford, Oreg.  
 Glacier, Charles J. Kraebel, superintendent, Belton, Mont.  
 Grand Canyon, J. Ross Eakin, superintendent, Grand Canyon, Ariz.  
 Hawaii, Thomas Boles, superintendent, Volcano House, Hawaii.  
 Hot Springs, Dr. Joseph Bolten, superintendent, Hot Springs, Ark.  
 Lafayette, George B. Dorr, superintendent, Bar Harbor, Me.  
 Mesa Verde, Jesse L. Nusbaum, superintendent, Mancos, Colo.  
 Mount McKinley, Henry P. Karstens, superintendent, McKinley Park, Alaska.  
 Mount Rainier, Owen A. Tomlinson, superintendent, Ashford, Wash.  
 Platt, Robert G. Morris, superintendent, Sulphur, Okla.  
 Rocky Mountain, Roger W. Toll, superintendent, Estes Park, Colo.  
 Sequoia, John R. White, superintendent, Three Rivers, Calif.  
 General Grant, John R. White, acting superintendent, Three Rivers, Calif.  
 Sullys Hill, Wm. H. Beyer, acting superintendent, Fort Totten, N. Dak.  
 Wind Cave, Roy Brazell, superintendent, Hot Springs, S. Dak.  
 Yellowstone, Horace M. Albright, superintendent, Yellowstone Park, Wyo.  
 Yosemite, W. B. Lewis, superintendent, Yosemite National Park, Calif.  
 Zion, Walter Ruesch, acting superintendent, Springdale, Utah.

**THE NATIONAL MONUMENTS**

Aztec Ruin, Earl Morris, custodian, Aztec, N. Mex.  
 Capulin Mountain, Homer J. Farr, custodian, Capulin, N. Mex.  
 Carlsbad Cave, W. F. McIlvain, custodian, Carlsbad, N. Mex.  
 Casa Grande, Frank Pinkley, custodian, Blackwater, Ariz.  
 Chaco Canyon, C. A. Griffin, custodian, Crown Point, N. Mex.  
 Colorado, John Otto, custodian, Grand Junction, Colo.  
 Devils Tower, John M. Thorn, custodian, Hulett, Wyo.  
 El Morro, Evon Z. Vogt, custodian, Ramah, N. Mex.  
 Gran Quivira, W. H. Smith, custodian, Gran Quivira, N. Mex.  
 Montezuma Castle, Martin L. Jackson, custodian, Camp Verde, Ariz.  
 Muir Woods, John T. Needham, custodian, Mill Valley, Calif.  
 Natural Bridges, Zeke Johnson, custodian, Blanding, Utah.  
 Navajo, John Wetherill, custodian, Kayenta, Ariz.  
 Papago Saguaro, J. E. McClain, custodian, Tempe, Ariz.



Petrified Forest, William Nelson, custodian, Holbrook, Ariz.  
 Pinnacles, Herman A. Hermansen, custodian, Pinnacles, San Benito County, Calif.  
 Scotts Bluff, ——— Gering, Nebr.<sup>1</sup>  
 Sitka, Peter Trierschield, custodian, Sitka, Alaska.  
 Tumacacori, Frank Pinkley, acting custodian, Blackwater, Ariz.  
 Verendrye, Adolph Larsen, custodian, Sanish, N. Dak.

No superintendent has been appointed for the Lassen Volcanic National Park, nor have custodians been appointed for the Dinosaur, Katmai, Lewis and Clark Cavern, Rainbow Bridge, Shoshone Cavern, Yucca House, Fossil Cycad, Hovenweep, Pipe Spring or Craters of the Moon National Monuments.

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<sup>1</sup> Custodian resigned. Successor not yet appointed.

# APPENDIX B

## STATISTICS

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## STATISTICS

### Visitors to parks, 1909-1924

Name of park	1909	1910	1911	1912	1913	1914	1915	1916
Hot springs.....	( <sup>1</sup> )	<sup>2</sup> 120,000	<sup>2</sup> 130,000	<sup>2</sup> 135,000	<sup>2</sup> 135,000	<sup>2</sup> 125,000	<sup>2</sup> 115,000	<sup>2</sup> 118,740
Yellowstone.....	32,545	19,575	23,054	22,970	24,929	20,250	51,895	35,849
Sequoia.....	854	2,407	3,114	2,923	3,823	4,667	7,647	10,780
Yosemite.....	13,182	13,619	12,530	10,884	13,735	15,145	33,452	33,390
General Grant.....	798	1,178	2,160	2,240	2,756	3,735	10,523	15,360
Mount Rainier.....	5,968	8,000	10,306	8,946	13,501	15,038	35,166	23,989
Crater Lake.....	4,171	<sup>2</sup> 5,000	<sup>2</sup> 4,500	5,235	6,253	7,096	11,371	12,265
Wind Cave.....	3,216	3,387	3,887	3,199	3,988	3,592	2,817	<sup>2</sup> 9,000
Platt.....	<sup>2</sup> 25,000	<sup>2</sup> 25,000	<sup>2</sup> 30,000	<sup>2</sup> 31,000	<sup>2</sup> 35,000	<sup>2</sup> 30,000	<sup>2</sup> 20,000	<sup>2</sup> 30,000
Sullys Hill.....	<sup>2</sup> 190	<sup>2</sup> 190	<sup>2</sup> 200	<sup>2</sup> 200	<sup>2</sup> 300	<sup>2</sup> 500	<sup>2</sup> 1,000	<sup>2</sup> 1,500
Mesa Verde.....	165	250	206	230	280	502	663	1,385
Glacier.....			<sup>2</sup> 4,000	6,257	12,138	14,168	14,265	12,839
Rocky Mountain.....							<sup>2</sup> 31,000	<sup>2</sup> 51,000
Hawaii.....								( <sup>1</sup> )
Lassen Volcanic.....								( <sup>1</sup> )
Mount McKinley.....								
Grand Canyon.....								
Lafayette.....								
Zion.....								
Total.....	86,089	198,606	223,957	229,084	251,703	235,193	334,799	356,097

Name of park	1917	1918	1919	1920	1921	1922	1923	1924
Hot Springs.....	<sup>2</sup> 135,000	<sup>2</sup> 140,000	<sup>2</sup> 160,490	<sup>2</sup> 162,850	<sup>2</sup> 130,968	<sup>2</sup> 106,164	<sup>2</sup> 112,000	<sup>2</sup> 164,175
Yellowstone.....	35,400	21,275	62,261	79,777	81,651	98,223	138,352	144,158
Sequoia.....	18,510	15,001	30,443	31,508	28,263	27,514	30,158	34,468
Yosemite.....	34,510	33,497	58,362	68,906	91,513	100,506	130,046	105,894
General Grant.....	17,390	15,496	21,574	19,661	30,312	50,456	46,230	35,020
Mount Rainier.....	35,568	43,901	55,232	56,491	55,771	70,371	123,708	161,473
Crater Lake.....	11,645	13,231	16,645	20,135	28,617	33,016	52,017	64,312
Wind Cave.....	16,742	14,431	26,312	27,023	28,336	31,016	41,505	52,166
Platt.....	<sup>2</sup> 35,000	<sup>2</sup> 36,000	<sup>2</sup> 25,000	<sup>2</sup> 38,000	<sup>2</sup> 60,000	<sup>2</sup> 70,000	<sup>2</sup> 117,710	<sup>2</sup> 134,874
Sullys Hill.....	2,207	4,188	4,026	9,341	9,100	<sup>2</sup> 9,548	8,478	8,035
Mesa Verde.....	2,223	2,058	2,287	2,890	3,003	4,251	5,236	7,109
Glacier.....	18,387	9,086	18,956	22,449	19,736	23,935	33,988	33,372
Rocky Mountain.....	117,186	101,497	169,492	240,966	<sup>2</sup> 273,737	<sup>3</sup> 219,164	218,000	224,211
Hawaii.....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	<sup>2</sup> 16,071	27,750	41,150	52,110
Lassen Volcanic.....	<sup>2</sup> 8,500	<sup>2</sup> 2,000	<sup>2</sup> 2,500	<sup>2</sup> 2,000	<sup>2</sup> 10,000	<sup>2</sup> 10,000	<sup>2</sup> 9,500	<sup>2</sup> 12,500
Mount McKinley.....	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	<sup>4</sup> 7	<sup>4</sup> 34	<sup>4</sup> 62
Grand Canyon.....			37,745	67,315	67,485	84,700	102,166	108,256
Lafayette.....			<sup>2</sup> 64,000	<sup>2</sup> 66,500	<sup>2</sup> 69,836	73,779	64,200	71,758
Zion.....				3,692	2,937	4,109	6,408	8,400
Total.....	488,268	451,661	755,325	919,504	1,007,335	1,044,502	1,280,886	1,422,353

<sup>1</sup> No record.

<sup>2</sup> Estimated.

<sup>3</sup> Indicated loss in travel from 1921 due largely to better methods of checking and estimating employed.

<sup>4</sup> Actual park visitors; many miners and prospectors passed through park.

*Visitors to some of the national monuments in 1919-1924*<sup>1</sup>

Name	1919	1920	1921	1922	1923	1924
Aztec Ruin (New Mexico)-----					6,234	5,968
Capulin Mountain (New Mexico)-----	<sup>2</sup> 1,500	<sup>2</sup> 3,200	<sup>2</sup> 3,000	<sup>2</sup> 3,000	<sup>2</sup> 1,000	<sup>2</sup> 7,000
Carlsbad Cave (New Mexico)-----						<sup>3</sup> 1,280
Casa Grande (Arizona)-----	3,677	7,720	6,296	5,068	6,787	9,583
Colorado (Colorado)-----	<sup>2</sup> 3,000	<sup>2</sup> 1,200	<sup>2</sup> 5,500	<sup>2</sup> 6,000	<sup>2</sup> 7,000	<sup>2</sup> 8,000
Devils Tower (Wyoming)-----			<sup>2</sup> 7,000	<sup>2</sup> 8,500	<sup>2</sup> 3,000	<sup>2</sup> 7,800
El Moro (New Mexico)-----		<sup>2</sup> 2,000	<sup>2</sup> 3,000	<sup>2</sup> 2,500	<sup>2</sup> 2,500	<sup>2</sup> 3,200
Katmai (Alaska)-----					15	17
Montezuma Castle (Arizona)-----		<sup>2</sup> 2,500	<sup>2</sup> 4,500	<sup>2</sup> 6,000	<sup>2</sup> 7,400	<sup>2</sup> 7,500
Muir Woods (California)-----	<sup>2</sup> 43,200	<sup>2</sup> 77,577	<sup>2</sup> 87,400	<sup>2</sup> 90,370	91,253	92,391
Natural Bridges (Arizona)-----					20	62
Navajo (Arizona)-----		64	65	112		85
Papago Saguaro (Arizona)-----		<sup>2</sup> 5,000	<sup>2</sup> 3,000	<sup>2</sup> 8,000	<sup>2</sup> 6,000	<sup>2</sup> 10,000
Petrified Forest (Arizona)-----	<sup>2</sup> 3,000	<sup>2</sup> 30,390	<sup>2</sup> 32,700	<sup>2</sup> 31,338	45,475	42,781
Pinnacles (California)-----					<sup>2</sup> 6,500	8,973
Rainbow Bridge (Utah)-----					142	115
Scotts Bluff (Nebraska)-----		<sup>2</sup> 5,000	<sup>2</sup> 6,000	<sup>2</sup> 6,000	<sup>2</sup> 20,000	<sup>2</sup> 35,000
Tumacacori (Arizona)-----		<sup>2</sup> 4,300	<sup>2</sup> 5,000	<sup>2</sup> 5,100	<sup>2</sup> 6,000	<sup>2</sup> 8,800
Verendrye (North Dakota)-----			<sup>2</sup> 1,000		<sup>2</sup> 3,500	
Total-----	54,377	138,951	164,461	171,988	212,826	248,555

<sup>1</sup> No records for other 12 national monuments.<sup>2</sup> Estimated.<sup>3</sup> Opened to public June 1, 1924.*Private automobiles entering the national parks during seasons 1917-1924*

Name of park	1917	1918	1919	1920	1921	1922	1923	1924 <sup>1</sup>
Yellowstone-----	5,703	4,734	10,737	13,586	15,736	18,253	27,359	30,689
Sequoia <sup>2</sup> -----	2,334	1,627	3,852	5,657	7,139	7,886	9,796	11,032
Yosemite-----	6,521	7,621	12,109	13,418	18,947	19,583	27,233	32,814
General Grant-----	2,158	2,438	3,366	4,710	6,545	12,010	12,036	9,118
Mount Rainier-----	5,894	7,602	10,434	10,814	12,271	17,149	27,655	38,351
Crater Lake-----	2,756	3,105	4,637	5,153	7,892	9,429	15,377	19,301
Wind Cave <sup>3</sup> -----	4,837	4,815	8,240	7,686	9,078	10,096	13,570	17,200
Platt <sup>4</sup> -----					21,848	<sup>4</sup> 30,000	<sup>4</sup> 50,000	<sup>4</sup> 57,400
Mesa Verde-----	364	371	436	570	651	969	1,255	1,803
Glacier-----	1,121	1,065	1,697	2,009	2,614	2,416	5,599	6,756
Rocky Mountain <sup>3</sup> -----	<sup>4</sup> 23,004	<sup>4</sup> 20,588	<sup>4</sup> 33,638	<sup>4</sup> 50,562	<sup>4</sup> 57,438	12	<sup>4</sup> 51,800	<sup>4</sup> 53,696
Hawaii <sup>3</sup> -----							8,025	10,150
Grand Canyon <sup>3</sup> -----			1,575	3,260	5,104	7,890	11,731	13,052
Lafayette <sup>3</sup> -----			<sup>4</sup> 7,000	<sup>4</sup> 10,000	9,958	8,650	8,600	12,561
Zion <sup>3</sup> -----				644	604	662	1,446	1,993
Total-----	54,692	53,966	97,721	128,074	175,825	197,105	271,482	315,916

<sup>1</sup> Automobiles entering parks with or without licenses, to and including Sept. 30, 1924.<sup>2</sup> License required only for Giant Forest Road.<sup>3</sup> No license required.<sup>4</sup> Estimated.



*Automobile and motorcycle licenses issued during seasons 1920-1924*

Name of park <sup>1</sup>	1920		1921		1922		1923		1924 <sup>2</sup>	
	Automobiles	Motorcycles	Automobiles	Motorcycles	Automobiles	Motorcycles	Automobiles	Motorcycles	Automobiles	Motorcycles
Yellowstone.....	13, 238	85	11, 552	58	20, 158	149	25, 357	131	28, 812	158
Sequoia <sup>3</sup> .....	2, 019	13	3, 041	23	3, 197	1	4, 350	---	3, 684	---
Yosemite.....	<sup>4</sup> 10, 112	126	<sup>4</sup> 15, 250	131	16, 335	134	28, 587	136	17, 696	89
General Grant.....	4, 350	37	6, 300	---	6, 217	---	8, 037	---	6, 521	---
Mount Rainier.....	9, 402	99	8, 824	60	10, 906	118	17, 208	299	19, 267	321
Crater Lake.....	3, 783	19	5, 821	41	8, 101	42	10, 864	61	16, 023	44
Mesa Verde.....	548	5	665	2	967	---	1, 146	2	1, 812	2
Glacier.....	531	---	3, 414	2	1, 548	1	4, 900	5	3, 981	2
Total.....	43, 983	384	54, 867	317	<sup>5</sup> 67, 429	<sup>6</sup> 445	<sup>5</sup> 100, 449	634	97, 809	616

<sup>1</sup> No licenses required for Wind Cave, Hot Springs, Platt, Hawaii, Lassen Volcanic, Sullys Hill, Rocky Mountain, Grand Canyon, and Lafayette National Parks. No roads in Mount McKinley Park.

<sup>2</sup> Number of licenses formally reported to Washington, to and including Sept. 30, 1924.

<sup>3</sup> Licenses required only for Giant Forest Road.

<sup>4</sup> Includes 5,360 autos in 1919, 1,419 in 1920, 1,210 in 1921, 665 in 1922, 525 in 1923, and 276 in 1924, the owners of which surrendered Yosemite Valley Highway Association certificates in lieu of payment of entrance fee.

<sup>5</sup> Includes 399 complimentary permits in 1922, 436 in 1923, and 244 in 1924.

<sup>6</sup> Includes 1 complimentary permit.

Licenses not required in certain parks because of small road mileage or unimproved condition of roads. (see footnote 1). Licenses also not required for travel on unimproved roads in other parks. No charge for license issued for operating cars on official business.

*Receipts collected from automobiles and motorcycles during seasons 1920-1924*

Name of park <sup>1</sup>	1920	1921	1922	1923	1924 <sup>2</sup>
Yellowstone.....	\$99, 015. 00	\$86, 469. 50	\$150, 287. 00	\$189, 375. 00	\$217, 235. 00
Sequoia <sup>3</sup> .....	5, 030. 00	7, 625. 50	7, 995. 00	10, 875. 00	9, 210. 00
Yosemite.....	43, 352. 00	70, 055. 00	81, 128. 00	101, 312. 00	87, 278. 00
General Grant.....	2, 180. 50	3, 146. 00	3, 063. 50	3, 975. 00	3, 287. 00
Mount Rainier.....	23, 587. 50	22, 112. 50	27, 330. 50	43, 309. 00	48, 488. 50
Crater Lake.....	9, 454. 00	14, 593. 50	20, 404. 50	27, 223. 50	40, 130. 00
Mesa Verde.....	824. 50	998. 50	1, 450. 50	1, 691. 50	2, 719. 00
Glacier.....	450. 00	5, 488. 50	2, 303. 00	7, 926. 50	5, 528. 50
Total.....	183, 893. 50	210, 488. 50	293, 962. 00	385, 687. 50	413, 876. 00

<sup>1</sup> No licenses required for Wind Cave, Hot Springs, Platt, Hawaii, Lassen Volcanic, Sullys Hill, Rocky Mountain, Grand Canyon, and Lafayette National Parks. No roads in Mount McKinley Park.

<sup>2</sup> Received in Washington to and including Sept. 30, 1924.

<sup>3</sup> License required only for Giant Forest Road.

*Statement of appropriations made for, and revenues received from, the various national parks and national monuments, and expenditures made therefrom during the fiscal years 1917-1924,<sup>1</sup> inclusive; also appropriations for the fiscal year 1925*

Name of the national park	Appropriations		Revenues	
	Appropriated	Expended	Received	Expended
Hot Springs:				
1917.....	---	---	\$35, 611. 75	\$31, 302. 98
1918.....	---	---	28, 883. 44	42, 822. 02
1919.....	<sup>2</sup> \$140, 000. 00	\$140, 000. 00	52, 109. 15	32, 130. 36
1920.....	---	---	45, 682. 85	35, 710. 33
1921 (deficiency).....	60, 000. 00	60, 000. 00	57, 807. 00	74, 021. 19
1922.....	---	---	55, 339. 15	55, 043. 85
1923.....	63, 900. 00	63, 127. 11	56, 669. 16	( <sup>3</sup> )
1924.....	67, 600. 00	67, 195. 39	44, 769. 53	---
1925.....	78, 000. 00	---	---	---

<sup>1</sup> For statement of appropriations and revenues prior to 1917 see 1920 Annual Report, pp. 354-358.

<sup>2</sup> Made available during fiscal years 1920 and 1921 by sundry civil acts approved July 19, 1919 (41 Stat., 204), and June 5, 1920 (41 Stat., 918).

<sup>3</sup> Expenditure of revenue for park purposes not authorized. Sundry civil act of June 12, 1917 (40 Stat., 153), Hot Springs. Act of May 24, 1922 (42 Stat., 590).

*Statement of appropriations made for, and revenues received from, the various national parks and national monuments, and expenditures made therefrom during the fiscal years 1917-1924, inclusive; also appropriations for the fiscal year 1925—Continued.*

Name of the national park	Appropriations		Revenues	
	Appropriated	Expended	Received	Expended
<b>Yellowstone:</b>				
1917	\$8,500.00	\$8,500.00	\$54,795.69	\$53,775.61
1918	10,500.00	9,645.82	71,393.56	96,812.34
1919	334,920.00	332,583.03	42,775.50	( <sup>3</sup> )
1919	43,259.48	539.44		
1920	255,500.00	253,577.15	120,027.61	
1920 (deficiency)	71,026.64	71,026.64		
1921	278,000.00	285,992.28	158,806.84	
1921 (deficiency)	8,000.00			
1922	350,000.00	348,746.54	165,014.53	
1923	361,800.00	361,487.38	203,140.02	
1924	368,000.00	394,926.67	299,132.97	
1924 (deficiency)	27,700.00			
1925	372,800.00			
<b>Sequoia:</b>				
1917	22,300.00	15,605.28	10,326.60	415.04
1917	50,000.00	50,000.00		
1918	25,000.00	24,578.71	13,492.53	25,508.45
1919	30,510.00	30,420.98	9,772.52	( <sup>3</sup> )
1920	35,000.00	34,824.54	15,899.00	
1921	36,000.00	35,732.79	19,584.99	
1922	86,000.00	85,961.84	20,086.27	
1923	78,000.00	77,989.82	23,917.22	
1924	120,000.00	119,817.64	24,220.01	
1925	136,000.00			
<b>Yosemite:</b>				
1917	250,000.00	249,987.45	53,500.66	55,098.45
1918	235,000.00	226,368.29	65,865.65	88,975.62
1919	255,000.00	254,294.64	57,520.03	( <sup>3</sup> )
1920	200,000.00	197,611.29	85,601.54	
1921	300,000.00	300,645.44	95,894.47	
1921 (deficiency)	3,000.00			
1922	300,000.00	295,079.94	131,797.51	
1923	280,000.00	278,355.77	148,860.60	
1924	295,000.00	294,641.87	173,732.28	
1925	309,000.00			
<b>General Grant:</b>				
1917	2,000.00	1,999.55	1,153.78	536.97
1918	2,000.00	1,999.97	1,801.63	3,951.88
1919	4,500.00	4,481.51	1,063.90	( <sup>3</sup> )
1920	6,000.00	5,992.79	1,870.83	
1921	5,300.00	5,300.00	2,663.37	
1922	6,000.00	5,981.24	3,480.45	
1923	6,500.00	6,481.76	3,180.16	
1924	50,000.00	49,937.82	4,847.73	
1925	14,175.00			
<b>Mount Rainier:</b>				
1917	30,000.00	29,999.19	14,346.80	17,617.04
1918	75,000.00	74,846.67	17,241.25	34,715.96
1919	24,600.00	24,552.28	17,336.47	( <sup>3</sup> )
1920	32,500.00	32,446.01	22,153.76	
1921	40,000.00	39,819.34	24,967.79	
1922	150,000.00	149,497.31	22,286.59	
1923	106,800.00	105,355.29	29,133.17	
1924	133,000.00	135,547.41	43,014.33	
1925	100,000.00			
<b>Crater Lake:</b>				
1917	8,000.00	7,999.88	4,565.25	
1918	15,000.00	14,738.44	5,505.72	
1919	13,225.00	13,203.84	5,958.21	( <sup>3</sup> )
1920	28,225.00	28,162.05	8,327.73	
1921	25,300.00	25,223.40	9,784.98	
1922	25,300.00	25,290.41	15,277.53	
1923	32,000.00	31,859.49	18,139.75	
1924	35,000.00	34,993.96	30,495.93	
1925	30,700.00			

<sup>3</sup> Expenditure of revenue for park purposes not authorized. Sundry civil act of June 12, 1917 (40 Stat., 153), and act of May 24, 1922 (42 Stat., 590).

<sup>4</sup> Unexpended balance of 1913 War Department appropriation of \$20,000 made available under Interior Department during 1919. Sundry civil act of July 1, 1918 (40 Stat., 678).

<sup>5</sup> For purchase of private holdings.

<sup>6</sup> \$3,000 transferred from Yosemite to Mount Rainier.

*Statement of appropriations made for, and revenues received from, the various national parks and national monuments, and expenditures made therefrom during the fiscal years 1917-1924, inclusive; also appropriations for the fiscal year 1925—Continued.*

Name of the national park	Appropriations		Revenues	
	Appropriated	Expended	Received	Expended
<b>Platt:</b>				
1917.....	\$8,000.00	\$8,000.00	\$434.11	\$138.28
1918.....	7,180.00	7,179.84	1,010.40	1,699.88
1919.....	7,500.00	7,485.05	482.63	( <sup>3</sup> )
1920.....	6,000.00	5,980.24	486.59	-----
1921.....	9,000.00	8,900.70	726.20	-----
1922.....	7,500.00	7,238.26	519.80	-----
1923.....	7,500.00	7,449.84	65.30	-----
1924.....	10,000.00	9,992.13	74.14	-----
1925.....	10,000.00	-----	-----	-----
<b>Wind Cave:</b>				
1917.....	2,500.00	2,499.87	1,632.60	1,013.04
1918.....	2,500.00	2,498.40	4,082.60	8,006.53
1919.....	4,000.00	3,988.77	2,533.15	( <sup>3</sup> )
1920.....	4,000.00	3,987.24	3,714.15	-----
1921.....	5,000.00	4,971.55	2,918.20	-----
1922.....	7,500.00	7,500.00	3,785.25	-----
1923.....	7,500.00	7,467.08	3,869.00	-----
1924.....	10,000.00	9,975.51	3,856.50	-----
1925.....	10,000.00	-----	-----	-----
<b>Mesa Verde:</b>				
1917.....	10,000.00	9,999.00	130.14	( <sup>7</sup> )
1918.....	10,000.00	9,913.05	2,763.75	-----
1919.....	18,000.00	17,022.44	3,348.66	-----
1920.....	11,000.00	10,959.69	3,317.95	-----
1921.....	14,000.00	13,929.71	3,771.35	-----
1922.....	16,400.00	16,339.30	1,273.72	-----
1923.....	43,000.00	42,883.39	3,690.10	-----
1924.....	35,000.00	\$ 36,710.99	4,071.65	-----
1925.....	42,500.00	-----	-----	-----
<b>Glacier:</b>				
1917.....	110,000.00	108,148.16	3,202.40	1,352.75
1918.....	115,000.00	114,362.82	4,438.22	9,026.86
1919.....	80,000.00	79,958.69	2,624.53	( <sup>5</sup> )
1920.....	85,000.00	85,000.00	7,253.85	-----
1920 (deficiency).....	81,849.12	81,572.94	-----	-----
1921.....	95,000.00	107,847.30	10,513.20	-----
1921 (deficiency).....	12,564.09			-----
1922.....	195,000.00	194,803.03	6,082.71	-----
1923.....	178,700.00	178,642.60	10,732.67	-----
1924.....	225,000.00	224,608.10	19,759.23	-----
1925.....	281,000.00	-----	-----	-----
<b>Rocky Mountain:</b>				
1917.....	10,000.00	9,964.24	871.27	( <sup>9</sup> )
1918.....	10,000.00	9,922.10	598.75	-----
1919.....	10,000.00	9,993.94	307.50	-----
1920.....	10,000.00	9,924.85	1,507.78	-----
1921.....	40,000.00	39,945.40	537.25	-----
1922.....	65,000.00	64,923.10	2,695.41	-----
1923.....	73,900.00	73,790.99	3,077.08	-----
1924.....	74,280.00	74,088.27	582.38	-----
1925.....	93,000.00	-----	-----	-----
<b>Hawaii:</b>				
1919.....	750.00	731.40	-----	-----
1920.....	750.00	747.52	-----	-----
1921.....	1,000.00	125.00	-----	-----
1922.....	10,000.00	9,645.16	-----	-----
1923.....	10,000.00	9,915.68	775.00	-----
1924.....	10,000.00	9,691.05	1,460.00	-----
1925.....	10,000.00	-----	-----	-----
<b>Lassen Volcanic:</b>				
1917.....	-----	-----	81.25	( <sup>3</sup> )
1918.....	-----	-----	118.05	-----
1921.....	2,500.00	2,410.90	-----	-----
1922.....	3,000.00	2,922.41	-----	-----
1923.....	3,000.00	2,904.87	228.66	-----
1924.....	3,000.00	2,927.16	277.27	-----
1925.....	3,000.00	-----	-----	-----

<sup>3</sup> Expenditure of revenue for park purposes not authorized. Sundry civil act of June 12, 1917 (40 Stat., 153).

<sup>7</sup> Expenditure of revenues Mesa Verde Park for park purposes not authorized by statute.

<sup>8</sup> \$1,000 from Yosemite and \$1,000 from Zion transferred to Mesa Verde.

<sup>9</sup> Expenditure of revenues from Rocky Mountain Park for park purposes not authorized by statute.



*Statement of appropriations made for, and revenues received from, the various national parks and national monuments, and expenditures made therefrom during the fiscal years 1917-1924, inclusive; also appropriations for the fiscal year 1925—Continued.*

Name of the national park	Appropriations		Revenues	
	Appropriated	Expended	Received	Expended
Grand Canyon:				
1919.....			\$525.03	(3)
1920.....	\$40,000.00	\$39,874.27	399.32	
1921.....	60,000.00	59,948.45	8,305.43	
1922.....	100,000.00	99,966.55	4,872.02	
1923.....	75,000.00	74,065.63	7,508.72	
1924.....	125,400.00	123,835.34	12,655.42	
1925.....	216,000.00			
Mount McKinley:				
1922.....	8,000.00	7,792.88		
1923.....	8,000.00	8,000.00		
1924.....	8,000.00	7,760.82		
1925.....	11,020.00			
Lafayette:				
1919.....	<sup>10</sup> 10,000.00	9,972.42		
1920.....	10,000.00	9,930.06		
1921.....	20,000.00	19,997.73		
1922.....	25,000.00	24,992.99		
1923.....	25,000.00	24,915.69		
1924.....	30,000.00	29,960.48		
1925.....	34,700.00			
Zion:				
1917 (deficiency).....	15,000.00	14,963.81		
1920.....			511.50	(3)
1921.....	7,300.00	8,825.96	524.00	
1921 (deficiency).....	1,585.07			
1922.....	10,000.00	9,968.62	414.95	
1923.....	10,000.00	9,947.00	584.37	
1923-24 (deficiency).....	133,000.00	146,368.22	913.25	\$913.25
1924.....	13,750.00			
1925.....	15,190.00			
Protection of national monuments:				
1917.....	3,500.00	2,586.66		
1918.....	5,000.00	4,832.70	225.00	(11)
1919.....	10,000.00	9,473.10	320.75	
1920.....	8,000.00	7,802.92	123.50	
1921.....	8,000.00	7,838.99	123.20	
1922.....	12,500.00	12,019.98	39.00	
1923.....	12,500.00	12,495.73	135.38	
1924.....	12,500.00	12,424.33	23.50	
1925.....	20,750.00			
Casa Grande National Monument: <sup>12</sup>				
1917.....	900.00			
1918.....	900.00			
1919.....	900.00			
Improvement of Navajo National Monument, Ariz.: 1917.....	<sup>13</sup> 3,000.00	1,962.69		
National Park Service:				
1917.....	3,666.67	2,513.62		
1918.....	17,600.00	17,413.33		
1919.....	19,200.00	19,177.50		
1920.....	22,220.00	21,524.46		
1921.....	27,420.00	27,090.59		
1922.....	31,020.00	30,957.72		
1923.....	32,420.00	32,383.50		
1924.....	33,200.00	32,922.67		
1925.....	44,000.00			
Fighting forest fires:				
1922.....	25,000.00	9,618.30		
1923.....	25,000.00	17,764.16		
1924.....	25,000.00	5,953.78		
1925.....	20,000.00			
Accounting services:				
1923.....	6,000.00	5,202.65		
1924.....	6,000.00	5,966.47		
1925.....	6,000.00			

<sup>3</sup> Expenditure of revenue for park purposes not authorized. Sundry civil act of June 12, 1917 (40 Stat., 153).

<sup>10</sup> Appropriation for 1919 made under the name of Sieur de Monts National Monument.

<sup>11</sup> Expenditure of revenue for monument purposes not authorized.

<sup>12</sup> Expended under the direction of the Commissioner of the General Land Office.

<sup>13</sup> Expended under direction of Smithsonian Institution.

*Summary of appropriations for the administration, protection, and improvement of the national parks and national monuments, together with the revenues received, for the fiscal years 1917<sup>1</sup>-1925, inclusive*

Year	Department	Appropriation	Revenues
1917	Interior Department.....	\$537,366.67	
	War Department.....	247,200.00	
1918	Interior Department.....	530,680.00	\$784,566.67
	War Department.....	217,500.00	
1919	Interior Department.....	963,105.00	748,180.00
	War Department.....	50,000.00	
1920		1,013,105.00	217,330.55
1921		907,070.76	
1922		1,058,969.16	196,678.03
1923		1,433,220.00	316,877.96
1924		1,446,520.00	396,928.27
1925		1,822,730.00	432,964.89
		1,877,835.00	513,706.36
			663,886.12

<sup>1</sup> For summary of appropriations and revenues prior to 1917 see 1920 Annual Report, p. 359.

<sup>2</sup> The revenues from the various national parks were expendable during the years 1904 to 1918, inclusive, with the exception of those received from Crater Lake, Mesa Verde, and Rocky Mountain National Parks, the revenues from which were turned into the Treasury to the credit of miscellaneous receipts.

*National park and monument lands administered by the National Park Service in relation to national forest lands including national monument lands, administered by the Forest Service*

State or Territory	National forest lands <sup>1</sup>	Park and monument lands <sup>1</sup>	Relation
	<i>Acres</i>	<i>Acres</i>	<i>Per cent</i>
Alabama.....	<sup>2</sup> 100,635		
Alaska.....	20,655,352	2,780,847	13.46
Arizona.....	11,203,438	640,677	5.72
Arkansas.....	<sup>2</sup> 961,732	912	.09
California.....	19,137,682	951,429	4.97
Colorado.....	13,248,256	295,381	2.23
Florida.....	337,938		
Georgia.....	158,335		
Hawaii.....		77,695	
Idaho.....	19,052,460	48,000	.25
Maine.....	32,256	<sup>3</sup> 5,289	16.39
Michigan.....	124,082		
Minnesota.....	1,048,444		
Montana.....	15,872,456	1,092,638	6.88
Nebraska.....	205,944	1,894	.92
Nevada.....	4,976,889		
New Hampshire.....	406,845		
New Mexico.....	8,520,834	22,834	.27
North Carolina.....	361,520		
North Dakota.....		1,033	
Oklahoma.....	61,486	848	1.37
Oregon.....	13,178,023	157,411	1.20
Pennsylvania.....	73,019		
Porto Rico.....	12,443		
South Carolina.....	19,522		
South Dakota.....	1,057,703	11,219	1.06
Tennessee.....	250,257		
Utah.....	7,463,703	77,122	1.03
Virginia.....	493,727		
Washington.....	9,862,610	207,342	2.10
West Virginia.....	198,281		
Wyoming.....	8,426,927	1,994,322	23.67
Total.....	157,502,793	8,366,893	5.31

<sup>1</sup> July 1, 1924. Alienated lands not included.

<sup>2</sup> Includes lands acquired under the Weeks law.

<sup>3</sup> Donated to the United States. Donations of lands in national monument areas amount to 470 acres.

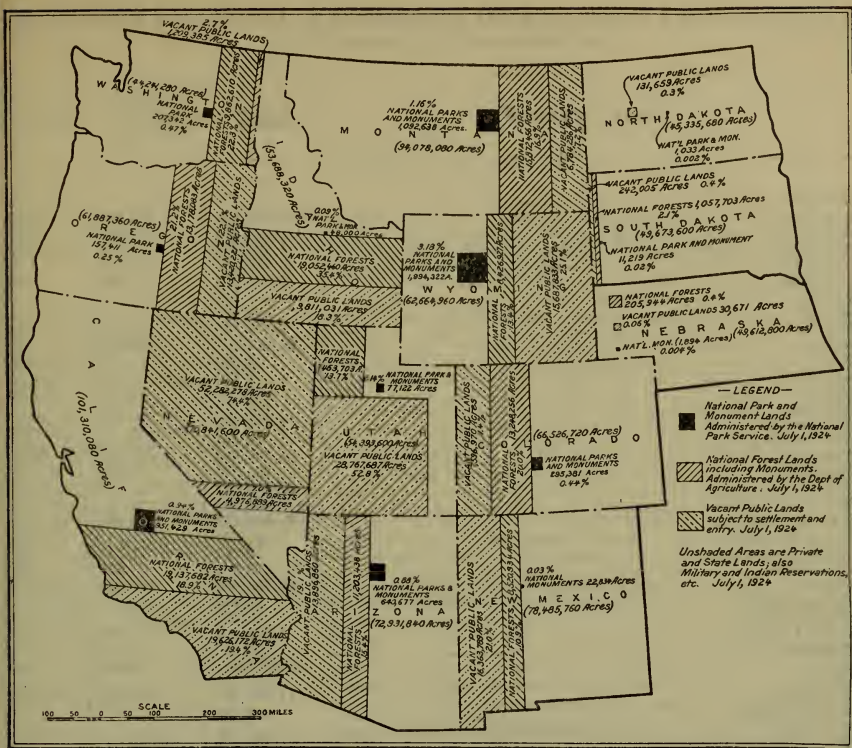


FIG. 1. Map of western portion of the United States, showing relation of the unalienated national park and monument lands, the vacant public lands, and the unalienated national forest lands to the several States

*National park and monument lands administered by the National Park Service in relation to the States and Territories in which they are located*

State or Territory	Area	Park and monument lands <sup>1</sup>	Relation
	Acres	Acres	Per cent
Alaska.....	378,165,760	2,780,847	0.74
Arizona.....	72,931,840	640,677	.88
Arkansas.....	34,134,400	912	.003
California.....	101,310,080	951,429	.94
Colorado.....	66,526,720	295,381	.44
Hawaii.....	<sup>2</sup> 3,160,320	77,695	2.46
Idaho.....	53,688,320	48,000	.09
Maine.....	21,145,600	5,289	.03
Montana.....	94,078,080	1,092,638	1.16
Nebraska.....	49,612,800	1,894	.004
New Mexico.....	78,485,760	22,834	.03
North Dakota.....	45,335,680	1,033	.002
Oklahoma.....	44,836,480	848	.002
Oregon.....	61,887,360	157,411	.25
South Dakota.....	49,673,600	11,219	.02
Utah.....	54,393,600	77,122	.14
Washington.....	44,241,280	207,342	.47
Wyoming.....	62,664,960	1,994,322	3.18
Total.....	1,316,272,640	8,366,893	.64

<sup>1</sup> July 1, 1924. Alienated lands not included.

<sup>2</sup> Area of the Islands of Hawaii and Maui on which is located the Hawaii National Park.



*National park and monument lands administered by the National Park Service  
in relation to the Federal lands<sup>1</sup>*

State and Territory	Federal lands <sup>2</sup>	Park and monument lands <sup>2</sup>	Relation
	<i>Acres</i>	<i>Acres</i>	<i>Per cent</i>
Alabama.....	136, 775		
Alaska.....	<sup>3</sup> 23, 436, 199	2, 780, 847	11. 86
Arizona.....	25, 740, 975	640, 677	2. 49
Arkansas.....	1, 196, 243	912	. 09
California.....	39, 715, 233	951, 429	2. 39
Colorado.....	21, 140, 607	295, 381	1. 40
Florida.....	417, 544		
Georgia.....	158, 335		
Hawaii <sup>4</sup> .....	1, 678, 574	77, 695	4. 63
Idaho.....	28, 911, 491	48, 000	. 17
Kansas.....	2, 038		
Louisiana.....	8, 876		
Maine.....	37, 545	5, 289	14. 09
Michigan.....	195, 773		
Minnesota.....	1, 312, 669		
Mississippi.....	18, 546		
Montana.....	23, 749, 380	1, 092, 638	4. 60
Nebraska.....	238, 509	1, 894	. 79
Nevada.....	57, 259, 167		
New Hampshire.....	406, 845		
New Mexico.....	24, 907, 457	22, 834	. 09
North Carolina.....	361, 520		
North Dakota.....	132, 692	1, 033	. 78
Oklahoma.....	96, 861	848	. 88
Oregon.....	26, 755, 655	157, 411	. 59
Pennsylvania.....	73, 019		
South Carolina.....	19, 522		
South Dakota.....	1, 310, 927	11, 219	. 86
Tennessee.....	250, 257		
Utah.....	36, 308, 512	77, 122	. 21
Virginia.....	493, 727		
Washington.....	11, 279, 337	207, 342	1. 84
West Virginia.....	198, 281		
Wisconsin.....	4, 652		
Wyoming.....	26, 109, 082	1, 994, 322	7. 64
Total.....	354, 062, 875	8, 366, 893	2. 36

<sup>1</sup> Includes vacant public lands, unalienated national park and monument lands, and unalienated national forest lands, but does not include military and Indian reservations, reclamation and power-site withdrawals, etc.

<sup>2</sup> July 1, 1924.

<sup>3</sup> Unalienated national forest, park, and monument lands. The area of vacant public lands in Alaska is not obtainable.

<sup>4</sup> Vacant public lands and forest lands of the Territory of Hawaii are under the Territorial land department.

## APPENDIX C

### REPORTS OF OFFICERS IN CHARGE OF THE NATIONAL PARKS AND MONUMENTS AND ENGINEERING DIVISIONS

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### HOT SPRINGS NATIONAL PARK

Dr. JOSEPH BOLTEN, Superintendent, Hot Springs, Ark.

#### GENERAL STATEMENT

The total receipts of the pay bathhouses were \$396,604.47, as compared with \$393,281.08 for the fiscal year 1923.

The net profits reported for 16 bathhouses aggregated \$89,333.41. Three pay bathhouses reported deficits amounting to \$6,016.87. The total profits, including deficits, for all (19) pay bathhouses last year were \$98,478.42.

The baths given were as follows: Complimentary, 2,962; paid baths, 610,523; at the United States free bathhouse, 59,683; at the Leo N. Levi Memorial Hospital Bathhouse, 6,228, making a grand total of 679,396 baths, as compared with a grand total of 667,212 given during the previous year.

#### THE SPRINGS

The springs, 46 in number, are located on the Central Avenue slope of Hot Springs Mountain, a part of Hot Springs National Park, set aside in 1832 by Congress as the first national reservation. They supply 850,000 gallons of hot water daily, which is collected and distributed to the Army and Navy General Hospital, the United States free bathhouse, the Leo N. Levi Memorial Hospital Bathhouse, and 19 pay bathhouses, all of which are under Government supervision. The water from the springs has an average temperature of 142° F.

#### PARK ADMINISTRATION

The park is in charge of the superintendent, who has supervision over all matters pertaining to the park and its management, the general sanitary control of all bathhouses receiving hot water, and control over all employees connected with the bathhouses.

The park personnel is divided into the following departments: Administrative, police, maintenance, and free bathhouse and clinic.

## RECEIPTS AND EXPENDITURES

## Receipts:

Water rent-----	\$38,080.00
Ground rent-----	100.00
Privilege fees of registered physicians-----	4,405.00
Privilege fees of bath attendants-----	1,665.00
Privilege fees of masseurs-----	431.00
Sale of attendants' badges-----	7.15
Sale of Oertel system maps-----	.19
Sale of unserviceable property-----	81.19

Total, deposited to credit of miscellaneous receipts----- 44,769.53

The receipts of this park will be increased during the coming fiscal year by \$3,640 from water rental to be obtained from the new Arlington Hotel.

*Expenditures.*—Of the appropriation of \$67,600 for the 1924 fiscal year, there was expended \$66,062.36 in the park.

The \$2,000 allotted from "Hot Springs Reservation, Proceeds, Sale of Lots, Special Fund" was expended in repairing certain features of the flood damage.

## CONSTRUCTION, MAINTENANCE, AND REPAIRS

A comfort station was constructed on top of Hot Springs Mountain, near the Observation Tower.

A flower house was constructed near the Cold Spring pavilion on Fountain Street to replace the one destroyed coincident with the burning of the Arlington Hotel.

Two shelter houses, 10 feet by 14 feet, near trails on Hot Springs Mountain, and one, 14 feet by 22 feet on top of West Mountain, were erected, the materials used being native stone, rough lumber, and redwood shingles.

A 4-foot trail was constructed from Happy Hollow to the top of Hot Springs Mountain, terminating at the Tower, with branches connecting with the new comfort station. Another was constructed from Happy Hollow to the eastern slope of North Mountain, terminating at the rear of the new Arlington Hotel, with a branch leading to the top of the mountain. A total of approximately 9,000 feet of trails was constructed.

Lavatory bowls and basins were installed in the treatment room of the free bathhouse. A 10-foot addition was placed on the chimney stack. A contract was let for the installation of 1,850 square feet of steam radiation to supplement the hot-air system which has proven to be very unsatisfactory.

The exteriors of the residence on Fountain Street and the barn were given two coats of paint. Doors and windows of the barn were replaced where necessary.

The Cold Spring, main entrance, and Hot Springs Mountain pavilions and two pavilions in Whittington Lake Park were given two coats of paint.

The flood damage to Whittington Lake Park was repaired, consisting of replacing wings on three concrete bridges; about 100 feet of retaining wall in the creek; removing and replacing iron fences; filling washouts requiring about 1,000 yards of soil, and removing débris. Two hundred feet of 30-inch drain tile was laid at the entrance to the West Mountain Road, and 45 feet of 18-inch drain tile laid from the West Mountain Road to the rear of the Levi Hospital to carry off storm water. Fifteen hundred feet of 6-inch concrete curbing, replacing the old stone curb which was badly damaged by the flood, and thirteen hundred feet of split tile gutter were installed along Bath House Row. The plots in front of the two new comfort stations on Bath House Row were topsoiled and grassed and shrubbery planted. Concrete walks were built from the main walk to these buildings. A terrace was built in the rear of Bath House Row, the necessary fill being made by dirt hauled and dumped without charge during excavation for the new Arlington Hotel. Maple trees were planted around the free bathhouse. Approximately 200 yards of alluvial soil were spread over the lawns and grass plots of the park. The usual work of weed, grass, brush, and dead timber cutting and policing of grounds was performed.

New metal signs were placed along all the park roads. Three dangerous hairpin loops on North Mountain roads and two on West Mountain roads were widened. A turn around on top of West Mountain was built, and a few narrow places in the West Mountain roads were widened for the safety of traffic. Following the cloudburst of May 1923, considerable resurfacing and repairing of retaining walls and gutters were required. Whenever necessary the graveling, raking, and grading of the roads were performed. Approximately 500 yards of gravel was placed on the road surfaces.

An electric-light pole, with a 40-foot flagpole running through the center, was placed in front of the free bathhouse.

The cold spring supplying the fountain on Fountain Street dried up and the fountain was connected to the city water supply. A hot-water shortage occurred in the north reservoir, supplying five houses on Bath House Row during the busiest part of the winter season but was relieved to some extent by pumping from the lower Arlington reservoir. Bathing was interfered with on two days. The 2,000-foot pipe line in which water is pumped from the Army and Navy Hospital tanks to the top of Hot Springs Mountain for supplying the comfort station and the drinking fountain was buried under ground in order that freezing weather may not stop the supply of water. A map of the entire hot-water system was made, on which all springs, reservoirs, and pipe lines were accurately located.

A new fountain was installed in the pavilion on Hot Springs Mountain.

## GOVERNMENT FREE BATHHOUSE AND CLINIC

The average number of persons bathed daily in the Government free bathhouse was 197, with a total of 59,683 baths given during the year. The total number of persons bathing was 4,025.

The total number of patients examined and treated in the free clinic was 3,676. Of this number 2,227 were venereal-disease cases and 1,449 were nonvenereal-disease cases. The total number of examinations, treatments, etc., given in the clinic during the year was 43,824.



The course of instruction for physicians was continued in the clinic, 15 physicians taking the course during the year.

In previous years great difficulty was experienced in heating the bathhouse during the winter, due to structural faults in the heating system. This condition has been obviated by installation of 1,850 square feet of radiation at a cost of \$3,950.

## PAY BATHHOUSES

No new bathhouses were built this year. The Magnolia Promenade is now complete so far as bathhouses are concerned. The bathhouses comprising Bath House Row represent an expenditure of several millions of dollars.

Work was started in November, 1923, on the erection of the new Arlington Hotel to be opened January 1, 1925. The building was designed by Mann & Stern, one of the leading firms of architects of the South. It will cost approximately \$3,000,000 and will stand as a memorial to the value of the hot waters.

The following tables show the business of the pay bathhouses for the fiscal year:

Bathhouse	Net amount received by attendants	Paid for redeemed baths	Total bath receipts, less redemptions	Receipts from massage, etc.	Total receipts	Total expenditures	Net profits
Alhambra	\$5,134.40	\$2,255.85	\$14,922.05	-----	\$14,922.05	\$9,803.10	\$5,118.95
Buckstaff	10,661.60	4,037.08	36,618.92	\$2,602.23	39,221.15	29,386.11	9,835.04
Eastman	9,866.08	5,114.55	34,864.20	1,200.00	36,064.20	20,266.90	15,797.30
Fordyce	6,246.84	3,615.94	28,692.86	5,308.05	34,000.91	28,041.79	5,959.12
Hale	6,655.40	1,330.20	20,019.40	432.00	20,451.40	15,165.16	5,286.24
Imperial	6,065.40	2,147.90	18,218.40	507.70	18,726.10	21,097.43	<sup>1</sup> 2,371.33
Lamar	9,915.62	5,921.44	31,881.06	3,791.36	35,672.42	27,754.49	7,917.93
Majestic	6,407.89	5,067.26	20,644.64	450.00	21,094.64	13,670.02	7,424.62
Maurice	10,968.60	4,444.50	38,467.00	4,239.95	42,706.95	34,481.16	8,225.79
Moody	3,648.09	1,633.80	11,042.35	256.80	11,299.15	7,506.82	3,792.33
Ozark	6,730.42	3,499.18	27,323.22	1,086.21	28,409.43	20,497.25	7,912.20
Ozark Sanatorium	2,078.68	876.53	6,009.17	-----	6,009.17	5,881.18	127.99
Pythian (colored)	4,395.34	381.76	7,880.74	484.75	8,365.49	11,360.34	<sup>1</sup> 2,994.85
Quapaw	7,838.89	2,832.46	25,699.94	1,715.37	27,415.31	23,780.94	3,634.37
Rector	1,970.40	1,499.30	6,169.60	21.70	6,191.30	6,841.99	<sup>1</sup> 650.69
Rockafellow	6,264.80	1,792.05	17,301.65	539.55	17,841.20	14,309.10	3,532.10
Superior	7,104.53	3,361.61	21,384.99	-----	21,384.99	17,390.67	3,994.32
St. Joseph's Infirmary	1,244.80	845.93	3,672.67	-----	3,672.67	3,115.50	557.17
Woodmen of Union (colored)	1,571.03	181.56	3,157.94	-----	3,157.94	2,940.00	217.94
Total	114,768.79	50,838.90	373,970.80	22,635.67	396,606.47	313,289.93	89,333.41

<sup>1</sup> Reported deficit, \$6,016.87.

Bathhouse	Total baths sold	Baths redeemed	Net paid baths sold	Paid baths given	Complimentary baths	Total baths given
Alhambra	35,280	4,667	30,613	30,340	24	30,364
Buckstaff	59,750	4,486	55,264	53,196	407	53,603
Eastman	58,200	7,510	50,690	52,182	182	52,364
Fordyce	41,427	4,520	36,907	36,656	129	36,785
Hale	36,689	2,217	34,472	34,437	21	34,458
Imperial	34,899	3,580	31,319	30,948	105	31,053
Lamar	60,171	9,110	51,061	51,811	747	52,558
Majestic	40,710	7,981	32,729	34,762	129	34,891
Maurice	63,335	6,350	56,985	56,557	241	56,798
Moody	21,705	2,809	18,896	18,940	126	19,066
Ozark	52,798	3,499	49,299	45,770	359	46,129
Ozark Sanatorium	12,824	1,663	11,161	11,060	135	11,195
Pythian (colored)	21,599	881	20,718	19,997	000	19,997
Quapaw	44,953	4,447	40,506	39,072	231	39,303
Rector	14,388	2,027	12,361	11,687	105	11,792
Rockafellow	35,745	3,258	32,487	31,135	000	31,135
Superior	42,664	5,793	36,871	36,874	000	36,874
St. Joseph's Infirmary	7,756	1,290	6,466	6,441	000	6,441
Woodmen of Union (colored)	8,792	408	8,384	8,658	21	8,679
Total	693,685	76,496	617,189	610,523	2,962	613,485

## SANITATION AND PUBLIC HEALTH MATTERS

Individual bathhouses are thoroughly inspected at regular and irregular intervals. Five regular inspections are made in the men's department of the bathhouses and two in the women's department each month. In addition to this, inspections are made in both departments at irregular intervals. Usually the conditions found are excellent, since it is to the advantage of these establishments to keep them in a clean and sanitary manner.

Regular physical examinations are made at the first of each month of all bathhouse employees who come in personal contact with bathers. Conditions found are noted on each employee's health card, and no such employee is permitted to work without a health card, which becomes a part of his record. All new employees in the bathhouses are given thorough physical examinations, including a Wasserman test.

Bacteriological examinations of the water were made at intervals to determine whether any contamination existed. I am glad to state that no contamination has been found this year.

Considerable mosquito control work was done in Whittington Lake Park, in our gravel pits, and at various points on the mountains. Standing bodies of water were drained and where ditches could not be cut, places were filled in.

#### VISITORS

The records for the travel season indicate that about 164,175 visited the park during the year. A considerable number of conventions met in the city, the number being in excess of the previous year. The number of auto tourists has greatly increased, and while no official figures are available, the chamber of commerce estimated that about 42,000 visited the park.

#### INVESTIGATION OF HOT WATERS

In October, 1923, a conference of leading members of the medical profession was called together in Washington, D. C., by the National Research Council at the request of the Secretary of the Interior to consider the proposed investigation of the therapeutic value of the hot waters. The conference unanimously adopted resolutions urging a thorough investigation of the physiological action and therapeutic value of the waters for the protection of the public in the use of the mineral waters and for the information of the medical profession.

#### RECOMMENDATIONS

It is recommended that an appropriation of \$40,000 be made for the construction of a central storage hot-water reservoir to conserve the water which is now running to waste and to help out in times of shortage. This reservoir should be built on the former Arlington site and covered over with soil which could then be grassed. A central pumping station would be necessary to pump the water to the various bathhouses.

It is recommended that all roads on the mountains be converted into two-way traffic roads so tourist and others may come and go as they desire without being turned back, as is now the case.

Additional trails are needed on North and West Mountains in order to open scenic features now difficult of access.

#### YELLOWSTONE NATIONAL PARK

HORACE M. ALBRIGHT, Superintendent, Yellowstone Park, Wyo.

#### GENERAL STATEMENT

Yellowstone Park was established March 1, 1872 (secs. 2474 and 2475, R. S., or 17 Stat., 32). It was the first national park to be established in the world and is our largest park. Its area is 3,348 square miles, or 2,142,720 acres, lying in Wyoming, Montana, and Idaho.

#### WEATHER

The fall months were characterized by generally pleasant weather with very little snow. December was cold and the year terminated in a cold wave of extreme severity, the lowest temperature at Mammoth being 34° below zero on December 31, which is not only the lowest of record for December but, with two exceptions, the lowest for the entire period of record for the past 37 years. At Buffalo Ranch 50° below zero occurred on the last day of the year. January was practically normal in temperature, but greatly deficient in snowfall, as were all the winter and spring months. Unusually mild and spring-like weather prevailed in February, and the highest temperature of 51° at Mammoth has not been exceeded in February since the record began in 1887. The light snowfall of winter and spring, together with the record-breaking dry weather of May and June, greatly retarded the growth of forage. However, this serious condition was somewhat improved by the plentiful precipitation that occurred in July. In the storm of July 20, snow fell at a number of places above the 7,000-foot level, 6 inches being reported in Dunraven Pass and 4 inches at Canyon. The summer was moderately warm and the weather was generally favorable for tourist travel. The highest temperature recorded in the park during the summer was 90° at Riverside, July 1. In addition to the regular Weather Bureau station at Mammoth, a daily record of the temperature and precipitation is kept permanently at Buffalo Ranch, Gallatin, Lake, Riverside, and Snake River.

#### TRAVEL IN 1924

This year 144,158 people visited the park as compared with 138,352 last year, an increase of 5,806.

There was a decrease in rail travel this year of 3,520 under last year. The western entrance shows a decrease of 2,706 by rail; the northern entrance 703, and the eastern entrance 508; 207 came in via the Lander or southern gateway. All entrances except the north and south showed an increase in automobile travel; 32,285 at the east; 26,553 at the north; 31,580 at the west; and 9,768 at the south.

The west entrance continues to lead in rail travel and the east entrance is the motorists' favorite gateway.

The largest number of park entrants registered in a single day during the 1924 season was 2,660 on July 22. Compare this with the high figure of last year, 2,859

(largest number ever registered in a single day in the history of the park) on August 7, and 1,983 on July 23, 1922. The heaviest train travel occurred on August 12, when 840 people were delivered at the rail gateways. The heaviest rail travel arriving at a single gateway was 488 at West Yellowstone by the Union Pacific System on June 26. It is interesting to note that during the 1924 season there were 17 days with over 2,000 visitors entering the park.

There was an increase of 9,559 in motor travel over last year.

The heaviest motor travel at park gateways on one day was 502 automobiles carrying 1,844 tourists on July 22, compared with 475 automobiles carrying 1,623 tourists on July 17, 1923. The eastern, or Cody entrance, enjoyed the largest motor travel for a single day on July 5, when 224 cars carrying 696 people entered the park.

*Total season travel by entrances, 1924 and 1923*

Gateway	Rail visitors	By automobile		By motorcycle		By walking, horse- back, etc., visitors	Pre- season visitors	Total visitors
		Cars	Visitors	Motor- cycles	Visitors			
1924								
North-----	13, 439	8, 199	26, 553	48	68	475	-----	40, 535
West-----	20, 409	9, 353	31, 580	38	42	96	-----	52, 127
East-----	6, 999	9, 930	32, 285	59	90	313	-----	39, 687
South-----	207	2, 871	9, 768	20	25	685	-----	10, 685
Pre-season visitors (north and west)-----		336	-----	-----	-----	-----	1, 124	1, 124
Total-----	41, 054	30, 689	100, 186	165	225	1, 569	1, 124	144, 138
1923								
North-----	14, 117	8, 908	28, 690	45	71	542	-----	43, 420
West-----	23, 117	6, 401	22, 531	33	44	177	-----	45, 867
East-----	7, 407	7, 703	25, 496	32	48	365	-----	33, 316
South-----	167	4, 347	14, 507	31	44	56	-----	14, 774
Pre-season visitors (north and west)-----			-----	-----	-----	-----	975	975
Total-----	44, 806	27, 359	91, 224	141	207	1, 140	975	138, 352

**PERSONNEL**

During the year the maximum number of employees on the pay rolls was 107 appointees and 348 temporary mechanics, skilled laborers, laborers, etc., a total of 455 on August 1, 1924. The minimum number of employees on the pay roll occurred during the month of January, when there were 68 appointees and 4 others on the rolls. Financial Clerk P. E. Bilkert was made assistant superintendent on May 1, 1924. This is a new position authorized this year.

**NATIONAL PARK SERVICE ACTIVITIES**

The activities of the National Park Service were approximately the same as those of last year.

**ADMINISTRATIVE DEPARTMENT**

*Headquarters office.*—During the fiscal year from six to eight clerks were employed in the headquarters office on general correspondence, files, personnel, purchasing, time-keeping, miscellaneous financial matters, information, and a wide range of other duties to this and to other parks. Approximately 16,500 pieces of mail were received and 17,300 dispatched.

*Appropriations.*—Appropriations made available since the date of the last report are as follows:

Act	Purpose	Amount
Apr. 2, 1924.....	Deficiency act; repair to roads following cloudbursts.....	\$27, 700
June 5, 1924.....	Administration, protection, and maintenance.....	336, 800
	Construction of physical improvements.....	36, 000
Total.....		400, 500

*Revenues for 1924.*—Revenues collected during the 1924 fiscal year were as follows:

Automobiles and motorcycles.....	\$195, 785. 80
Hotels and camps.....	37, 808. 50
Transportation.....	48, 069. 82
Stores.....	12, 196. 57
Miscellaneous.....	5, 272. 28
Total.....	299, 132. 97



All of these funds were deposited to the credit of miscellaneous receipts in the United States Treasury.

Revenues for the 1925 fiscal year will amount to approximately \$315,000.

#### ENGINEERING DEPARTMENT

This department is in charge of Engineer A. W. Burney, aided by Assistant Engineer W. I. Davis.

**Road maintenance.**—During the 1924 season 340 miles of road were maintained out of a total mileage of 356, of which 298 miles is in the park, 28 miles in the Shoshone forest, and 30 miles in the Teton forest. Twenty-five crews were employed on this work, requiring 140 employees and 54 teams.

Twice daily during the season 107 miles of road were sprinkled. Eight horse-drawn and 9 truck sprinklers were used. Four of the truck sprinklers were provided with 3-inch centrifugal pumps operated by the main engine for drawing water from the streams.

**Snow removal.**—In both Sylvan and Dunraven Pass snow was removed by blasting and shoveling in order to have these roads open in time for the season. Sylvan Pass was opened to travel June 12; Dunraven Pass, June 18; the south side of Mount Washburn, June 27; and the north side, June 30. The road to Tower Falls, the Buffalo Ranch, and Soda Butte was opened on May 7; to Norris Geyser Basin, on May 10; West Yellowstone to Old Faithful, April 28; and cars reached Canyon and Lake on May 13. On May 18 the first car crossed the Continental Divide from Old Faithful to West Thumb.

**Road improvement.**—The section of road along the Firehole River between Firehole Cascades and Old Faithful, 13.7 miles, is being graveled this season. The gravel is loaded with a steam shovel and hauled with teams, trucks, and a tractor with trailers.

Along both sides of the road between the Lake and Canyon ditches are being constructed to provide better drainage and permit the subgrade to dry out. About 4 miles of this road will be improved in this way.

Over 40 galvanized-iron culverts of 12 and 18 inches diameter were installed this season on different sections of the park roads.

Along the road to the Lake, about 2 miles from West Thumb, a log bulkhead 3 feet high and 1,600 feet long was constructed to protect the roadway from waves when the lake is high.

To provide space for future expansion of the Old Faithful permanent camp a new roadway 1,300 feet long was built and the old road abandoned.

**Buildings.**—A bunkhouse was constructed in Dunraven Pass, 16 by 24 feet, log-trim frame building, for use of snow crew in the spring and maintenance crew in summer.

Ranger Station and information office constructed in Dunraven Pass, 13 by 16 feet, log-trim frame building.

Five comfort stations, built 12 by 22½ feet, provided with plumbing fixtures installed—two at Fishing Bridge camp, one at Lake auto camp, one at Tower Falls, and one at West Thumb.

A snowshoe cabin, 30 by 16 feet, was constructed at Heart Lake.

Two checking stations built, one at West Yellowstone entrance and the other at Cody or Eastern Entrance.

Both the Heart Lake cabin and the West Yellowstone entrance were built under the personal supervision of the chief ranger.

**Canyon sewage system.**—A sewage system, which will serve the public auto camp, the ranger station, stores, etc., at that place was constructed this season. Nine concrete manholes were built, 2,200 lineal feet of 8-inch and 900 lineal feet of 6-inch sewer tile was laid and a concrete sedimentation tank 12 by 38½ feet was built. A chlorinating apparatus will be installed to treat the sewage.

**Reconstruction work in Shoshone forest.**—Repairing the damage done to roads and bridges in the Shoshone forest by the cloudburst of July 22, 1923, was commenced in October, 1923, discontinued during the winter and resumed March 18, this year. At Elk Fork the steel bridge was raised and abutment repaired by driving poles around the base and placing new concrete. New log bridges were built at Clocktower and Canyon Creeks and a 24-foot concrete T beam bridge built over Gunbarrel Creek. To prevent further damage to the roadway by flood waters, a total of 543 lineal feet of rock-filled log crib was constructed at different points, also considerable channel change and other protection work.

**Survey of lease sites.**—All the sites occupied by park operators, numbering 42 in all, were resurveyed and new maps and descriptions made to bring the leases up to date.

#### LANDSCAPE ENGINEERING ACTIVITIES

Chief Landscape Engineer D. R. Hull visited the park at the time of the superintendents' conference and again in early June, 1924. He fixed the locations of new buildings to be erected during the summer, approved the location of the new telephone line to Norris, and made suggestions regarding certain vista cutting, located a site for the Lewis Lake permanent camp, and gave advice on a large number of miscellaneous matters affecting in one way or another the park landscape.

#### SANITATION DEPARTMENT

This department, in charge of Master Plumber William Wiggins, cooperated closely with the engineering department in construction work, and was assisted constantly by the United States Public Health Service officers on duty here.

(1) **Public automobile camp development.**—Mammoth: Installed 12 laundry tubs with two 5 kw. thermostatic electric heaters. Constructed cesspool and 600 feet of 6-inch sewer tile for laundry.

Canyon: Completed installation 31 flush toilets, 8 wash basins, 4 urinals, 38 water hydrants, 30 wood tables and benches. Laid 2,200 feet 8-inch and 900 feet 6-inch sewer tile. Septic tank under construction. No earth toilets in this camp.

Lake: Installed 8 flush toilets, 2 wash basins, 1 urinal, 24 wood tables and benches. Laid 200 feet 4-inch, 100 feet 3-inch, and 1,500 feet 1½-inch water pipe, the latter to septic tank.

**Fishing Bridge:** Installed 16 flush toilets and wash basins, 2 urinals, 100 wood tables and benches. Constructing water system with 4,500 feet 4-inch iron pipe, settling tank, dam.

**Sylvan Pass:** Installed dam with 12,000 gallons of water for camp.

**Tower Falls:** Installed 8 flush toilets, 2 wash basins, 1 urinal. Constructed cess-pool. Laid 200 feet 6-inch sewer tile, and 600 feet 2-inch iron water pipe.

(2) **Mosquito control.**—Extensive ditching and oiling at the Canyon, Lake, Upper Basin, and West Thumb in the spring, with great improvements in the mosquito situation at all places except the Canyon.

(3) **Garbage and refuse disposal.**—All dump grounds being cleaned up, tins and glass buried, garbage not eaten by bears buried, and paper, truck, and wood burned in the automobile camps.

(4) **Miscellaneous.**—Special investigations being made of water supplies for Upper Basin, Lake, Canyon, and Mammoth. Operated 5 septic tanks and chlorinators. Operation of 2 swimming pools supervised.

#### PROTECTION DEPARTMENT

This department is under the leadership of Chief Ranger S. T. Woodring, and the ranger force prior to June 16 consisted of the chief ranger, three assistant chief rangers, and 27 park rangers. On June 16, 52 temporary park rangers were added to the force, making a total summer strength of 84.

**Winter activities.**—Regular and special patrols were made throughout the fall, winter, and spring season for the purpose of game observation and protection. Telephone lines were maintained through the winter.

**Summer activities.**—The work of the ranger force during the summer season was materially expanded and covered a wide range of duties too numerous to mention here.

**Forest fires.**—There was one serious forest fire this year. It was caused by lightning, and was reported to headquarters from the Mount Washburn fire lookout station on August 27. The fire burned over an area of 2,500 acres, not all timberland. Thirty-one fires of a minor nature were extinguished by rangers at points adjacent to the loop road, the damage being slight in each case. Numerous small blazes at widely separated points were discovered and promptly extinguished.

**Trail maintenance and improvement.**—The trail mileage in the park now totals 842, exclusive of game trails used on patrol; the new trail construction during the year was 32 miles and the entire trail system has been cleared of timber and repaired. The new trails are located briefly as follows: Mammoth Hot Springs Formation, connecting all points of interest, 3 miles; east side of the Yellowstone River from Sublime Point to a point 7 miles below. This is known and designated as the Eagle Scout Trail, following an appropriate dedication ceremony in honor of the builders of the trail—Eagle Scouts from Oregon, Washington, Montana, and Idaho. New trails in the Tower Falls and Cache Creek districts account for the remaining 22 miles of construction.

**Fish planting.**—All records are as follows:

	1922	1923	1924
Total collection of black spotted trout eggs from park waters.....	16,751,620	31,570,000	32,000,000
Number of eggs collected in park, hatched and returned to park waters or planted as eyed eggs.....	7,373,800	12,795,000	18,544,000
<i>Total number fish planted in park</i>			
Black spotted trout collected in park.....	7,373,800	12,795,000	18,544,000
Black spotted trout received from Montana State hatchery.....	1,000,000	-----	-----
	8,373,800	12,795,000	18,544,000
Eastern brook trout received from Montana State hatchery.....	110,000	100,000	49,400
Rainbow trout, received from Montana State hatchery.....	120,000	100,000	-----
Loch Leven trout received from Montana State hatchery.....	-----	-----	41,800
Total fish plants for year.....	8,609,800	12,995,000	18,635,200

#### BUFFALO RANCH OPERATIONS

The principal improvements at the Buffalo Ranch during the year consisted of the following:

The erection of a new machine shed, dimensions 70 by 20 feet. Sixty acres of land were cleared and plowed, seeded to oats, and irrigated but not cut this year. Other activities have consisted of maintenance and repair to fences, roads, and buildings and the harvesting of the hay crop, which totaled 300 tons.

The tame buffalo herd, which numbered 672 animals when the last report was submitted, now totals 780. Since the last report 120 calves have been born. The weaning and feeding of calves was begun on January 7 and feeding of the main herd was begun on January 20. There were 50 male calves and 51 females, making a total of 101. Sixteen were castrated. Buffalo feeding was discontinued on April 21, 415 tons of hay having been fed. There were 5 cows and 1 bull shipped to zoological gardens during the year and 6 bulls, outlaws and cripples, destroyed; their hides and heads were saved. Winter kills consisted of one only, a cow. There were 50 tons of hay on hand when buffalo feeding was discontinued on April 21.

#### HAY RANCH OPERATIONS

Game and horse feeding at the various hay ranches during the past winter season accounted for 126 tons of hay, and of this amount 25 tons were fed at Yanceys, 66 tons at Slough Creek, and 35 tons at Gardiner. Balance on hand: Slough Creek, 210; Gardiner,



200; total, 410 tons. An accurate statement of this year's tonnage can not be had to date on account of much of it being recently stacked, but the approximate tonnage is as follows: Slough Creek, 136; Yanceys, 52; Gardiner, 64; total, 252; including Buffalo Ranch, grand total, 1924, hay crop, 552 tons.

Further hay ranch activities consist of the following: Slough Creek, 25 acres plowed, put under irrigation, and seeded to oats; harvested, replowed, and seeded to grass. Yanceys, 50 acres plowed, put under irrigation, and seeded to oats; harvested, replowed, and seeded to grass.

One thousand one hundred feet of flume was constructed at Yanceys.

#### PREDATORY ANIMALS

During the year 226 coyotes were killed.

#### NATURAL FEATURES OF THE PARK

Observations of wild life, geysers, and hot spring activities, forests, flowers, birds, etc., have been made by Park Naturalist E. J. Sawyer and rangers and are briefly reported as follows:

*Game conditions.*—Game conditions have been excellent throughout the year. The drought conditions of May and June (the driest of record) retarded materially the forage growth on the principal winter ranges, but unusually heavy rainfall throughout the month of July gives reasonable assurance of adequate forage for the approaching winter season. The losses last winter were unusually moderate and on the whole did not exceed the loss of the preceding year, which was placed at 2 per cent.

*Buffalo, tame herd.*—Twelve buffalo bulls of fine proportions were kept at Mammoth Hot Springs for show purposes throughout the summer season. Other remarks in connection with the tame herd will be noted in the paragraph relating to the Buffalo Ranch.

*Buffalo, wild herd.*—Reports during the past year do not indicate any material increase in the wild buffalo herd. However, we have no reason to believe that the total count of the preceding year (76) is not a fair statement of the herd total at this time.

*Mountain sheep.*—Ranger reports during the past winter show an actual count of 217. We believe, however, that the total number of sheep in the park is not less than 600.

*Antelope.*—Antelope have done well. The losses for the season were 5 and the total of the herd less the losses is 320, which shows a substantial increase over the total of 253 reported for the preceding year. All reports indicate a normal increase this season. The antelope range was patrolled by two rangers throughout the winter season.

*Moose.*—Actual counts last season totaled 121 and they were reported from all sections of the park. The estimated total for the park is 385. Information has been received that the permits will not be issued to kill moose in Wyoming this fall, so a substantial increase in their numbers is anticipated for next year. The total for the park must now be close to 450.

*Deer.*—White-tail deer are extremely limited as to numbers and are rarely seen. The total reported during the past year was 8—1 at Mammoth and 7 in the Deep Creek country east of the Yellowstone River. The one at Mammoth was accidentally killed. Mule deer are increasing throughout the park; 314 were actually seen last winter. This is probably less than one-fifth the mule deer in the park. There must be from 1,500 to 1,800 mule deer in this reservation.

*Elk.*—The elk losses during the past winter were very moderate and the calving season was unusually favorable. Full counts were not had on the elk herds last spring, but substantial increases in the herd totals of the preceding season are assured. We believe that the northern herd, including the Gallatin & Madison herds, now totals about 20,000 head.

*Black bears.*—It was not unusual to see as many as 25 bears on the usual and customary tour of the park; the blacks and browns were most commonly seen, as they particularly frequented the main traveled ways. More than the usual number of cubs were observed. We believe there are close to 200 black bear in the park.

*Grizzly bears.*—This animal was seen in greater numbers than last year. They were commonly seen at the feeding grounds at Canyon and as many as 17 were counted at one time. They do not frequent the mainly traveled ways and are seldom seen before sundown. Grizzly cubs were observed in more than the usual numbers during the past season. There must be at least 60 in the park.

*Beaver* are increasing in all sections of the park that are suited to their special requirements.

*Rabbits and other small animals.*—There is no particularly noticeable increase in the small animals inhabiting the park excepting, perhaps, the ground squirrel (gopher), which has come to be a nuisance in some localities. All small animals are plentiful and were commonly observed with interest by park visitors throughout the season.

*Birds.*—The bird life of the park is, in general, about the same as in the past year. The interest in bird life has been much stimulated and added to by the new collection of eggs and nests of local species, a small collection of bird skins and several water color drawings of park birds. The drawings illustrate 23 species.

*Trees.*—There has been very considerable damage to the forests by certain defoliating insects and the Douglas fir bark beetle. The heaviest damage by the defoliators is in the West Yellowstone region where hundreds of acres of lodgepole pine have been destroyed and a much larger area seriously affected. Spraying operations have been carried on for several miles along the West Yellowstone road, under direction of Dr. F. C. Craighead, and Dr. J. C. Evenden, entomologists of the United States Department of Agriculture.

The spruce budworm defoliator continued active in the Hellroaring region and on Crescent Hill. Spraying will be necessary next year to keep this defoliator from destroying trees along the Grand Loop Road above Camp Roosevelt.

The Douglas fir bark beetle is being fought in forests about Camp Roosevelt.

*Flowers.*—The wild flowers, remarkably varied and abundant, occur in undiminished numbers in all their established habitats. They remain one of the chief attractions of the park.



## GEYSERS AND HOT SPRINGS

*Mammoth Hot Springs.*—Angel terrace, formerly active, is nearly dry. The activity of Jupiter terrace seems to have shifted toward the west. The Butterfly, sometimes called the Canary, an old terrace, has renewed its activity and is increasing in size and attractiveness. Cleopatra terrace is drying. Hymen terrace is spreading northward. There is new activity on Highland terrace.

*Norris Geyser Basin.*—In general about as usual. Constant Geyser, which suddenly stopped erupting in 1923, occasionally resumed activity.

*Lower Geyser Basin.*—Conditions substantially as usual.

*Upper Geyser Basin.*—Old Faithful has played at intervals averaging about 62 or 63 minutes, but varying considerably. Restless Geyser was active this season, and the Bee Hive played after the Giantess as usual. There were two eruptions of the Giantess. The Oblong was more active this year than usual. Total activity in the basin apparently about average.

*West Thumb.*—There are one or two new springs near the Lake Shore Geyser. The Fishing Cone is accessible by land connection, no board or other bridge being needed to reach it, owing to low water.

## INFORMATION DEPARTMENT

Thirty thousand six hundred and seventy-seven people visited the information office at headquarters during the season: 2,870 in June; 13,344 in July; 12,528 in August; and 1,935 in September. Compare the total of 30,677 with 33,822 visitors to the information office in 1923 and 30,289 in 1922. During the season at the information office and at the ranger stations in the park 83,560 free publications regarding the park were distributed and 5,501 Government publications, including 874 portfolios were sold. Compare this total sale with 6,792 publications, including 1,681 portfolios disposed of last year. In addition 1,041 books of other publishers were sold.

*Lecture service.*—The lecture service at Mammoth was performed by Park Ranger W. J. Cribbs, who delivered 3 lectures each evening before audiences totaling approximately 68,000. Lectures were similarly conducted at Old Faithful and were attended by approximately 36,000 persons.

*Guide service.*—Two guides were maintained at Mammoth and two at Old Faithful, each man conducting two parties a day over the formations. Eleven thousand and eight visitors were guided over the formation at Mammoth Hot Springs and 27,701 over the formations at the Upper Geyser Basin, making a total of 38,709. Dr. Henry S. Conard, park ranger, performed the duties of nature guide in the Tower Falls district and a total of 1,883 persons availed themselves of the nature-guide services during the course of the season.

## ELECTRICAL DEPARTMENT

*Electric system.*—The following table shows the total production of the power plant and disposition of current as compared with similar data for the fiscal year 1923.

The peak load for the year was 124 kilowatts as compared with 124 kilowatts last year.

	1922-23	1923-24
Total production in kilowatt hours.....	325,014	451,022
Sold to park utilities.....	42,191.91	85,703
Consumed for street lighting.....	17,824	23,786
Balance, consumed by Government buildings, for power and lighting, lost on lines, etc.....	258,036.09	332,729

*Telephone system.*—New line Mammoth to Norris, 20 miles. Twenty-five-foot cedar poles used, each pole with two 8-pin cross-arms; 10 wires to be strung for the present, 4 for hotel company and 6 for Park Service; the line being constructed jointly by hotel company and Park Service and is located as much as possible out of view of the road. In a swath cut through the timber parallel to and 80 feet from the road. The two present unsightly lines will be removed. Line being constructed as a matter of heavy maintenance and replacement, and will be continued next year to Yellowstone Lake, and following year to Old Faithful. One additional wire is being strung on poles between Old Faithful and West Yellowstone, and beginning at the 7-mile post from Norris towards Madison Junction to the Firehole River, thereby changing the line from a grounded circuit to a metallic circuit.

## TELEGRAPH AND TELEPHONE STATISTICS

## Telegrams

	1922-23	1923-24
Government sent.....	1,044	1,198
Government received.....	578	744
Commercial sent.....	1,092	1,563
Commercial received.....	914	1,146
Total calls on Government switchboard.....	83,197	85,800

## PAINTING DEPARTMENT

The master painter and his assistants painted exterior and interior of the hospital, 10 large structures, a number of small buildings, roofs, etc. Painted equipment, including 8 sprinklers, 10 freight trucks, and a number of wagons. Over 800 new signs were painted and old signs were retouched, relettered, and overhauled. All fire-alarm boxes were painted, glass lettered, and the interior of quarters were redecorated during the winter months.

## MECHANICAL DEPARTMENT

The mechanical department maintained 42 trucks and 9 automobiles, a steam shovel, a caterpillar engine, compressors, pumps, and sundry engines; repaired road machinery and equipment including gravel loaders, graders, drags, dump wagons, etc.; repairs to shovels, picks, and sundry other road and fire tools. Between seven and eight hundred horses were shod.

The carpenter made repairs to buildings, built bodies for freighting trucks, assisted in building 6 additional sprinklers which were motorized, brake blocks for dump wagons, erected fire siren, and alarm boxes, and built a number of earth toilet buildings, etc.

A maximum of 7 and a minimum of 5 men were employed in the shops.

## PROPERTY AND TRANSPORTATION

Under the direction of the steward and master of transportation 2,222 tons of material, equipment, and supplies were moved from railroad terminals to headquarters. From headquarters 11 trucks were operated through the park supplying road camps, construction camps, etc. The total mileage of the trucks was approximately 55,000. A maximum of 15 men were engaged in the warehouse and in the transportation work.

## IMPROVEMENTS BY PUBLIC UTILITIES AND INDIVIDUAL OPERATORS

*Yellowstone Park Camps Co.*—Mammoth: Completion construction of main building; constructed large coal house; warehouses reconstructed and painted; 4 new flush-toilet buildings constructed; 52 new 2-room and 21 new 1-room frame lodges erected; barn and large corral constructed for saddle horses; landscape work begun in front of main building. Improved fire protection at four different places, each place being equipped with standpipes and about 250 feet of 2-inch hose.

Old Faithful: Old service buildings torn down and large main building erected, including large dining room with spacious veranda overlooking Old Faithful Geyser, modern kitchen, large commissary, refrigerating plant, and ice-making machinery, butcher shops, pantry coolers, etc., constructed a large dormitory for girls. Erected new boiler house and installed 80-horsepower boiler, 62-horsepower engine and 5-kilowatt generator, steam pump, etc. Two new flush-toilet buildings erected; 25 new 2-room and 25 new 1-room lodges built; established fire protection similar to that at Mammoth.

Lake Camp: Additions to side and rear of kitchen; large loading platform built; 2 new flush-toilet buildings constructed; 27 2-room and 25 1-room lodges built; erected new buildings for housing of camp tools and excess equipment; fire protection established.

Canyon Camp: Extension to curio shop; building erected for housing tools, etc.; 2 new flush-toilet buildings erected; 2 new dormitories erected for employees; 36 new 2-room and 26 new 1-room lodges constructed; sewerage line from septic tank extended; new engine and power house built.

Camp Roosevelt: New building erected to serve in winter as caretaker's quarters and in summer as manager's office and residence; 3 2-room and 3 1-room lodges built; considerable improvement to old lodges accomplished.

Cody Road Lodge: Erected new main building, housing lobby, verandas, dining room, kitchen, employees' dining room, bakery, pantry, storehouse, flush toilet rooms. Five 2-room and 5 1-room lodges erected for overnight tourists; 10 2-room and 6 1-room bungalow lodges erected for employees' quarters.

*Yellowstone Park Hotel Co.*—Mammoth: Built entire new kitchen and installed all new equipment and 20-ton refrigerator plant. Extended old dining room, doubling its capacity. Much improvement work was done, including installation of new light fixtures, new fire escapes, radiation in dining room, laundry tubs, lavatories, bath tubs, freight and linen elevators, fire equipment, etc. Added 20 rooms to girls' dormitory and built new mens' dormitory. Thirty rooms of hotel redecorated. New barber shop and beauty parlor built.

Old Faithful: Installed new lavatories, new electric generating plant, electrical equipment, increased water supply, and made other miscellaneous improvements.

Lake: Completed new wing of hotel; kitchen rebuilt; new kitchen equipment installed; capacity of dining room increased 50 per cent, old part of building replastered, rekalsomined and rewired, and lobby remodeled. Many other improvements have been made, including installation of new lavatories, radiation in dining room, new 80-kilowatt electric generator, two 100-horsepower boilers, electrical equipment, fire escapes and other fire equipment, etc. Two-story girls' dormitory, consisting of 57 rooms, erected.

Canyon: Installed 285 lavatories, necessitating replastering, painting, and kalsomining, new electrical kitchen equipment, fire-fighting and other miscellaneous equipment. Sanitation improvements made.

*Yellowstone Park Transportation Co.*—Purchased the following new equipment: 60 11-passenger White busses; 7 White touring cars; 2 2-ton White trucks; 1 5-ton White truck with gasoline tank; 7 Ford trucks; 1 Ford roadster; 30 new windshields, 100 new speedometers. Overhauled entire fleet of 250 cars. New repair shop and storage house for gas and oil completed at Tower Falls. Additions to bunk houses and mess houses at Mammoth, West Yellowstone, and Canyon. Work begun on new mammoth machine shop and garage situated near Gardiner. Numerous miscellaneous improvements made.



*J. E. Haynes, official photographer.*—At Canyon, erected of logs a 60 by 68 feet picture shop, completely outfitted, including display and sales room, complete finishing plant, with latest power equipment, housing and mess quarters for 10 employees; at Mammoth a new dormitory erected, 30 by 40 feet frame construction, housing 17 men. At Tower Falls private electric-light plant and refrigerating plant installed. New equipment consists of 2-ton White truck, 16-foot copper-riveted cedar boat equipped with Evinrude motor for lake and river photographing, also trailer for same; Naturalists Graflex camera, panorama camera, small portable hand camera, etc.; additional improvements installed in Mammoth finishing plant. All shops have been refinished and painted.

*Henry P. Brothers.*—Thirty-foot reinforced concrete extension to swimming pool  $5\frac{1}{2}$  to 8 feet deep, 142 feet long, and concrete dressing room and observation platform with 39 dressing rooms 3 feet 6 inches by 5 feet; 24 feet by 50 feet of original swimming pool cut off and made into wading pool for children, 2 to  $2\frac{1}{2}$  feet deep; 1,000 feet 10-inch wood stave pipe line.

*George Whittaker, merchant.*—Two sleeping rooms and bathroom added to Canyon store building; new gas pumps and tanks (capacity 5,000 gallons) installed at Canyon and Mammoth; new garage erected at Mammoth on site of old garage; new frame building covered with canvas, 43 feet by 32 feet, erected in public automobile camp at Mammoth, used as summer branch store.

*C. A. Hamilton, merchant.*—New frame store with log trim erected at Lake Fishing Bridge and filling station with 5,000-gallon tank completed at this point; new lighting fixtures and miscellaneous improvements installed at Lake store; new log-trim store with 80-foot frontage erected at Thumb and filling station with 5,000-gallon tank; float constructed for care of rowboats in conjunction with boat company. A new wing has been added to the Old Faithful store and the building is now 160 feet by 110 feet, the largest store in the national park system. In the Hamilton stores a special effort has been made throughout the season to keep prices on staple products at a minimum, and many favorable comments have resulted.

*Park curio shop.*—On Mammoth Hot Spring terraces established a soft drink booth and an experimental delicatessen stand in the Mammoth auto camp.

#### FRANCHISES AND PERMITS

There were but two changes in the franchises of the long-term public utilities. A new contract covering the operation of a curio shop and delicatessen stand was granted to Pryor & Trischman extending over a period of 10 years from January 1, 1924. A new contract was also granted to Mr. H. P. Brothers to operate a bathhouse at Upper Geyser Basin, extending over a period of 10 years from January 1, 1924.

#### DEPARTMENT OF JUSTICE—UNITED STATES COMMISSIONER'S COURT

Hon. John W. Meldrum, commissioner since 1894, held court whenever there were cases to be tried. During the year 34 cases were tried by the commissioner. There were 25 convictions and 4 acquittals; 4 were bound over to United States district Court, and 1 case pending. A total of \$660 in fines, exclusive of costs, was imposed on defendants found guilty. There were 16 cases involving violations of speed regulations, 2 cases of burglary, 2 cases of larceny, 10 violations of the Federal prohibition act, 1 case of assault, 2 cases defacing natural phenomena, and 1 case of unlawful possession of traps.

#### POST OFFICE DEPARTMENT

Mr. C. T. Hansen, post-office inspector for this district, visited the park during the winter and made plans for the transfer of the post office to larger quarters during the busy months of the tourist season. This change will take effect before the opening of the 1925 season.

Business has increased in proportion to the increase in travel.

#### DEPARTMENT OF THE INTERIOR

*Geological Survey.*—Water Resources Branch: Continued its observation and inspection of gauging stations on park streams. Installed a cable and other equipment as part of permanent automatic gauging station on Lamar River; also established permanent staff gauge at this point.

*General Land Office.*—On August 25, 1924, sold the town of West Yellowstone under the land laws.

#### DEPARTMENT OF COMMERCE

*Bureau of Fisheries.*—Broke brilliant egg harvest, hatching and fish planting record of last year. This year gathered 32,000,000 eggs, of which 8,626,000 were planted in the park as eyed eggs, and 6,398,000 as fry. Shipped 13,456,000 to adjoining States, to other national parks, and to certain national forests. District Supervisor C. F. Culler in charge.

#### DEPARTMENT OF AGRICULTURE

*Weather Bureau.*—The work of the bureau was continued under Observer E. H. Fletcher.

*Bureau of Entomology.*—Detailed Dr. F. C. Craighead and Dr. J. C. Evenden, entomologists, to continue the study of forest conditions in the park, and extensive spraying operations were conducted under their supervision in the West Yellowstone district during the summer season.

*Bureau of Biological Survey and Forest Service.*—Cooperated, in June, in a special study of elk range conditions in and adjacent to the park. Maj. E. A. Goldman in charge of survey.

#### TREASURY DEPARTMENT

*Public Health Service.*—Continued its cooperative work, Sanitary Engineer H. P. Haddon in general charge, and Associate Sanitary Engineer I. W. Mendelsohn in charge here. Surveyed lines for Canyon automobile camp sewer system, designed system and





ordered materials; surveyed lines from Canyon Hotel reservoir to Cascade Lake, from Iron Creek to Old Faithful Inn, and from Transportation Company quarters to Canyon Hotel; directed mosquito control measures; collected and shipped water samples; inspected automobile camps, garbage, and refuse dump, swimming pools, etc.; operated 5 chlorinators and 5 septic tanks; Dr. J. M. Wolfe, acting assistant surgeon, inspected sanitation of hotels, camps, etc., and general health of the community.

*Prohibition service.*—The Federal prohibition director for Montana cooperated splendidly in enforcement of the Volstead Act, detailing special and secret agents to West Yellowstone and Gardiner, and occasionally, on request, sending them into the park.

#### PUBLICITY

Through the cooperation of the public utilities, Lawrence Martin, formerly head of the United Press Service in Washington, D. C., was secured to direct park publicity, and out of the abundance of his experience and great ability obtained for the park most gratifying results.

#### OPENING OF THE PARK

The opening ceremonies were held on June 20 at the north entrance under the auspices of the Livingston Chamber of Commerce and the Upper Yellowstone Valley Citizens Association. President L. E. Flint, of the Livingston Chamber of Commerce, presided. Music was by the Gateway City Band. The speakers were Hon. T. L. Oddie, United States Senator from Nevada; Hon. Joseph M. Dixon, Governor of Montana; and Capt. John R. Quinn, National Commander of the American Legion. Commander Quinn delivered the principal address, pleading for the preservation of the national parks and the general conservation of our natural resources, and then swung open the chain that formally opened the Yellowstone for the 1924 season. All of the speakers stressed the importance of the national parks as Americanizing influences and advocated their protection and wise development.

#### DEATH OF EX-PARK SUPERINTENDENTS

During the year four ex-superintendents of Yellowstone died—Col. F. A. Boutele, superintendent 1889–1891; Brig. Gen. James B. Irwin, superintendent 1897–1899; Lieut. Gen. S. B. M. Young, superintendent 1897 and 1907–8; and Col. H. C. Benson, 1908–10.

#### VITAL STATISTICS

There were 4 births and 10 deaths in the park during the year.

#### HOSPITAL AND MEDICAL SERVICE

During the winter the park hospital, closed since 1918 when evacuated by the Army, was reconditioned and equipped for service. It was leased to Dr. G. A. Windsor, surgeon of Livingston, Mont., who was also made supervising surgeon of the park. Equipment was furnished by Doctor Windsor in part, and in part from Government supplies. A section of the hospital was fully equipped for contagious cases. Splendid surgical and hospital service was rendered. The following cases were cared for: 1 insane; 6 scarlet fever; 4 diphtheria; 15 major accidents; 50 medical; 25 major surgicals; and 15 minor surgicals.

Dr J. M. Wolfe continued to render service to Government employees under contract and to engage in general practice. He attended to 275 house calls and 350 office calls during the year.

#### SCHOOL

School opened September 4, 1923, and closed May 13, 1924. There was an average enrollment of 16 pupils—11 girls and 5 boys; teacher, Mrs. Jessie L. Cummings. The school was maintained by private subscription.

#### RELIGIOUS SERVICES

Services were held in the chapel at least twice and sometimes three or four times every Sunday during the tourist season. Congregational, Baptist, English Lutheran, Episcopal, Methodist, and Catholic services were conducted.

#### RECOMMENDATIONS

1. That the park be extended to include the Teton Mountains, headwaters of the Yellowstone, and other country naturally belonging to the park.

2. That all irrigation and other projects that would result in exploitation of the park be condemned and killed as they are proposed.

3. That a new fish hatchery be built at Lake Yellowstone and fully equipped. The present hatchery is inadequate in every respect and unsightly in the extreme.

4. That more funds be provided for upkeep of roads, trails, telephone lines, and other improvements; for the ranger service; for the buffalo and other ranches; for general sanitation; and for public camp grounds.

#### YOSEMITE NATIONAL PARK

W. B. LEWIS, Superintendent, Yosemite, Calif.

#### GENERAL STATEMENT

The Yosemite National Park, when created by the act of October 1, 1890 (26 Stat. 650), was situated in Tuolumne, Mariposa, Madera, and Mono Counties, Calif., and covered an area of about 1,512 square miles, being 36 miles wide by about 40 miles long. Under the act approved February 7, 1905, 542.88 square miles were excluded and 113.62 square miles were added to the park, making a net reduction in area of

429.26 square miles, so that the area after the passage of the above act was 1,082.74 square miles, the park being situated in Tuolumne, Mariposa, and Madera Counties. By act of June 11, 1906, there were added to the park the Yosemite Valley, 48.60 square miles; Mariposa Big Tree Grove, 4 square miles; and a strip lying between the latter and the park proper, 2.13 square miles; and deducted by the change in the southwestern boundary, 13.06 square miles, making a net addition to the area of 41.67 square miles. The present area of the park is 1,124.41 square miles.

#### PARK ORGANIZATION

The park is administered by the superintendent, who supervises and controls all governmental activities in the park except the post offices and the United States commissioner's court. He also supervises the activities connected with the operation of the various public utilities, such as transportation, hotels, stores, studios, etc., operated under franchise or permit from the Department of the Interior. He is assisted in this work of administration, supervision, and control by an organization divided into eight departments, each with its supervisory head, as follows: Administrative, maintenance, engineering, protection, electrical, mechanical, forests and timber, educational.

Park headquarters is maintained in Yosemite Village in Yosemite Valley. During the summer months approximately 200 employees of all classes, including 30 rangers, are engaged in park work. This force diminishes to approximately 75 during the winter months.

#### WEATHER CONDITIONS

Abnormal weather conditions prevailed practically throughout the entire year. While there were occasional fairly substantial rains through the fall months of 1923, winter precipitation was far below that of any winter season in the park of which we have record. No snow fell on the floor of Yosemite Valley until January 1, 1924, and almost none even in the high country of the park.

During the latter part of March the park was visited by a series of storms. While these storms brought a total snowfall on the floor of the valley in excess of 50 inches, high temperatures quickly melted the snow and by April 10 all evidences of winter had again left the valley and other portions of the park below the six or seven thousand foot elevation. From that date on throughout the season of 1924 practically no rain whatsoever fell in this section of the Sierra Nevadas, with the result that water conditions became acute long before July 1. Small streams and springs that ordinarily flow throughout the year were entirely dry by midsummer, and even such streams as the Tuolumne River and the Merced River had dwindled to little more than a trickle by August 15.

#### PARK SERVICE ACTIVITIES

The activities of the National Park Service were approximately the same as last year.

##### ADMINISTRATIVE DEPARTMENT

*Headquarters office.*—The office at headquarters was operated with essentially the same personnel as during the preceding year. Approximately 11,439 pieces of mail were received and 25,190 dispatched.

*Appropriations.*—The park operated under an appropriation of \$295,000, of which \$225,000 was devoted to general administration, operation, and maintenance purposes and \$75,000 to new construction work.

*Revenues.*—Revenues were collected during the year ending June 30, 1924, and deposited in the general fund of the Treasury as follows:

License fees and rentals	\$20,667.61
Automobile and motorcycle permits	103,095.00
Miscellaneous	45,390.70
Total	169,153.21
Less remittance fees	321.99
Net total	168,831.22

##### MAINTENANCE DEPARTMENT

This department, in addition to general maintenance of grounds, looked after the maintenance of 138 miles of roads in the park and 13 miles of road outside of the park, the maintenance of which was authorized from park funds. It also handled the necessary maintenance and improvement work of approximately 625 miles of trails in a condition, in spite of longer seasonal use than they are ordinarily put to, that met the demands of travel fully as well, if not better, than during the previous year.

##### ENGINEERING AND CONSTRUCTION DEPARTMENT

As heretofore, this department has had charge of the bulk of the work done under the park construction appropriation and also the maintenance of buildings and fences and the maintenance and operation of water and sewer systems.

*Construction work.*—A dormitory for the women employees of the service, consisting of main building and two detached cottages for sleeping quarters, was constructed at headquarters, and rangers' quarters, automobile checking kiosk, and public-comfort station were installed at Bridal Veil Checking Station at the foot of the Wawona Grade. Nine completely equipped comfort stations were installed in the public camping grounds, with the necessary connecting sewer lines and water service.

<sup>1</sup> Does not include 434 Yosemite Valley Highway Association certificates at \$5 each; total, \$2,170. Does not include \$2 motorcycle fee lost by Ranger Morse in a motorcycle accident. Total deduction from gross revenues, \$2,172.

Construction under contract of a new administration building, for which funds were appropriated in the 1924 fiscal year appropriation, was begun. The construction of this building was contracted to Gutleben Bros., of Los Angeles, at a contract price of \$34,465. The plans call for a 2-story building of frame construction and log trim, with stone veneer to the top window line of the first story. The contract calls for completion by October 20, 1924. When completed this will be the second unit of the proposed park administrative center, which will eventually include a museum, a post office, stores, and studios surrounding two sides of an appropriate plaza.

There was also under way at the close of the season additional extensions to the sewer system; the erection of incinerators for the cremation of garbage and waste; the development of a new water supply source in Illilouette Creek; the building of a trail from the Waterwheel Falls to Pate Valley through the main Tuolumne Canyon by way of the Muir Gorge; and the erection of ranger stations and public-comfort stations at Alder Creek on the Wawona Road, El Capitan Station at the foot of the Big Oak Flat grade, and at Tuolumne Meadows on the Tioga Road.

*Maintenance.*—Maintenance activities as carried on under this department were similar in detail to those reported upon last year.

#### PROTECTION DEPARTMENT—RANGER SERVICE

The ranger service, with a minimum of 10 men during the winter months and a maximum of 30 men during the summer months, has had a wholly satisfactory year from the viewpoint of effective park control, enforcement of regulations, protection of fish and game, and protection of the park against fires.

As stated in my last report, our force is materially smaller than it should be and as funds can be made available our temporary force, at least over the peak travel season, should be materially larger than it now is.

#### ELECTRICAL DEPARTMENT

All electrical, telephone, and telegraph service in the park being operated by the Government, constant vigilance must be maintained over these systems, the maintenance and operation of which is under the direction of the electrical department.

*Electrical system.*—No marked extensions have been made to the electrical system as detailed in my last report. During the year ending June 30, 1924, the plant operating 24 hours daily developed a total output of 4,282,770 kilowatt hours.

#### Power report

	Kilowatt hours 1923	Kilowatt hours 1924	Increase or decrease 1924
			<i>Per cent</i>
Sold for lighting purposes.....	189,461	195,199	+ 3
Sold for heating purposes.....	1,510,215	1,321,243	-13
Sold for cooking purposes.....	641,998	593,423	- 8
Sold for power purposes.....	115,652	133,569	+15
Sold for domestic use.....	89,206	121,071	+36
Total sold.....	2,546,532	2,364,505	- 7
Used by service, including line losses.....	1,996,053	1,918,265	- 4
Total output of plant.....	4,542,585	4,282,770	- 6

The decline in the electrical production and sale resulted from the restrictions it was necessary to place on the use of electricity because of the unusual shortage of water.

A contract was negotiated with the San Joaquin Light and Power Corporation, by the terms of which that company is to furnish needed power to the park in excess of the quantities that can be produced in the park power house during the periods of low water and in turn the park is to deliver to the company such surplus as can be developed in its plant during periods of high water and may be accepted by the company. By this arrangement it is believed that future power shortages in the park will be avoided even during the periods of low water that are experienced annually during the late summer and early fall months.

*Telephone system.*—Continuous 24-hour local and long-distance telephone service was maintained throughout the year except for interruptions resulting from line troubles occasioned by blasting in connection with the construction of the all-year highway by the State highway commission between Briceburg and El Portal.

*Telegraph system.*—Except for short interruptions in the service, occasioned as above mentioned, daily telegraph service was maintained throughout the year over park telegraph lines connecting with lines of the Western Union and the Pacific Telephone & Telegraph Co. at El Portal.

The following table gives an analysis of the business handled through both telephone and telegraph systems, together with a comparison with the business of the preceding years:



*Telephone and telegraph report*

	1923	1924	Decrease
			<i>Per cent</i>
Local telephone calls.....	347, 332	329, 829	6
Long-distance calls.....	7, 761	7, 690	1
Telegrams through telephone exchange.....	762	626	18
Telegrams by Morse key.....	18, 752	17, 878	5
Total messages, all classes.....	374, 607	356, 023	5

## MECHANICAL DEPARTMENT

The open winter followed by the early natural opening of the mountain roads had one compensating feature in that it materially reduced the difficulties and expense of maintenance and repair of motor-driven equipment generally experienced in the spring months during the period of snow removal in connection with the opening of mountain roads. The result was that the thirty-odd motor vehicles in use in the park were maintained at less cost and in better condition by the mechanical department than in normal years.

As in the past, this department assisted the maintenance and electrical departments in the repair and maintenance of all road-building and electrical-driven machinery.

## FORESTS AND TIMBER DEPARTMENT

As in previous years, this department, with the park forester in charge, supervised the cutting of timber in the park and the work of the city and county of San Francisco in connection with their development of the Hetch Hetchy water supply.

*Yosemite Lumber Company.*—During the period from July 1 to October 22, 1923, the Yosemite Lumber Co. operating in townships 3 and 4 south, ranges 20 and 21 east, employed an average of 351 men at their logging camps during their cutting season. They operated 9 donkey engines hauling to 8 landings and 4 Shay locomotives to move their log cars. They cut and shipped to their mill 25,208,814 feet b. m. of logs on 4,662 cars, an average of 5,407 feet b. m. per car. They cut over about 890 acres of land of which 745 acres are in the Yosemite National Park, located in sections 35, township 3 south, range 21 east, and 1, 2, 11, and 12, township 4 south, range 21 east, and 145 acres are in the Sierra National Forest located in sections 21, 28, and 33, township 3 south, range 20 east.

*City and county of San Francisco.*—The city and county of San Francisco in connection with their Hetch Hetchy project operated their sawmill at Mather, located in section 2, township 1 south, range 19 east, during the period from July 1 to November 8, 1923. During this period the city employed an average of 62 men at their sawmill camp. They cut 2,714,570 feet b. m. of lumber. They cut over 84 acres of land all of which are in the Stanislaus National Forest located in the S.  $\frac{1}{4}$  of NE.  $\frac{1}{4}$  section 1, and the N.  $\frac{1}{2}$  of NE.  $\frac{1}{4}$  section 12, township 1 south, range 19 east. The city closed their sawmill operation on November 8.

## EDUCATIONAL DEPARTMENT

Although practically all other activities in the park suffered as a result of the general business depression in the State, a similar reflection of conditions was not observed so far as this department was concerned, as throughout the season there was a noticeable increase of interest shown in all phases of educational work. The museum, the nature guide hikes, the lectures, and camp-fire talks, and during the year 52,816 people visited the museum and 49,172 were in attendance at the various lectures and camp-fire talks, bringing the total number of people brought in contact with Yosemite educational work to 105,167. Nature Notes were published weekly during the months of June, July, and August, and monthly during the remainder of the year.

The staff, consisting of the park naturalist only during the winter months, was augmented by the addition of from four to five nature guides during the months of June, July, and August. The park was fortunate in securing the continued cooperation of the California State fish and game commission, who again extended the services, during the months of June, July, and August, of Dr. Harold C. Bryant.

The recent donation by the Laura Spelman Rockefeller Memorial of \$70,500 for the construction, maintenance, and partial administration of a new museum building in Yosemite National Park was received with most gratifying appreciation, not only because it will enable the proper housing of the museum exhibits but the encouragement it has given to those who have given their time and effort in the development of the educational work in the park will mean much in the extension of the educational work into new and more profitable fields for the park visitor. In addition to this donation, individual donations by park visitors for use in connection with the construction, equipment, and supplying of a new building to the amount of \$5,073.50 were received during the year. During the year also approximately 900 additional exhibits were added to the museum.

## COOPERATIVE FEDERAL AND STATE ACTIVITIES

As heretofore, certain other Government departments have maintained representation in the park in connection with certain activities foreign to the Park Service, and for purposes of securing special assistance and advice on park problems other departments of Federal and State Governments have been called upon.

## DEPARTMENT OF JUSTICE

The United States commissioner for the park conducts his office under the supervision of the Department of Justice and it is before him that all cases of violation of park regulations and penal Federal and State laws are tried. During the year 63 cases were tried by the commissioner, resulting in 52 convictions and 11 acquittals. A total of \$651 in fines, and jail sentences aggregating 9 months and 20 days were imposed upon defendants found guilty during the year.

## POST OFFICE DEPARTMENT

The main Yosemite National Park post office continued to function during the year in the wholly inadequate quarters in the old village. Branch offices at Camp Curry and Yosemite Lodge were also maintained during the operating season of those resorts. The Government operated star route between El Portal and Yosemite also operated continuously throughout the year.

## DEPARTMENT OF AGRICULTURE

This department, through its Bureau of Entomology, has continued its cooperation in connection with the control of insect attacks on the forests of the park. With the exception of the lodgepole stands, a most satisfactory situation in this respect has been maintained. As reported last year, no practical method has been evolved for the control of insect depredations in the lodgepole stands, and in the Tuolumne Meadows forests the infestation continues to spread slowly but surely and all hope for the saving of that wonderful stand of timber has been abandoned.

## FOREST SERVICE

The Forest Service has continued its helpful cooperation in the locating and reporting of fires in the park, and was particularly of service to us in the spring of 1924 in preventing a proposed raid on the park by sheep and cattle grazing interests. The studies it had given the situation made it possible to give us information on the general grazing situation throughout the State which stood us in good need in combating the exaggerated statements of grazing needs made by these interests.

## UNITED STATES PUBLIC HEALTH SERVICE

As has been the case for the past three or four years, we have had the benefit of the services of an assistant sanitary engineer of the Public Health Service to advise and assist us in the handling of the many sanitary and health problems that must be given the closest consideration and supervision in connection with the handling of the thousands of people who visit the park.

## STATE OF CALIFORNIA

Approximately 400,000 trout fry were furnished by the California State Fish and Game Commission for planting in the lakes and streams of the park.

For seven years negotiations have been carried on with the California State Fish and Game Commission looking toward the installation by the commission of a fish hatchery capable of supplying a sufficiency of fry for restocking purposes. These efforts seem to have borne fruit, as advice received in June, 1924, was to the effect that the governor of the State had definitely authorized the expenditure of State funds for this purpose and negotiations are now in progress with the commission looking toward an early beginning of actual construction.

As mentioned elsewhere, the Park Service is also indebted to the commission for its continued cooperation in our Nature Guide Service.

## PUBLIC UTILITIES—FRANCHISES AND PERMITS

The following franchises and permits were in effect and operative during the season of 1924:

Name	For what granted	Expiration	Annual rent
E. N. Baxter	Sale of curios, photos, etc.	Dec. 31, 1924	\$75
Mrs. John Degnan	Delicatessen store	do	1 250
H. C. Best	Curios, photos, etc.	do	1 250
A. C. Pillsbury	do	do	1 250
J. T. Boysen	do	do	1 250
D. J. Foley	do	do	1 250
Dr. Claude H. Church	Hospital, medical, and dental service	Oct. 15, 1928	None.
Yosemite Stage & Turnpike Co.	Automobile stage line	Dec. 31, 1931	\$100
Trustees of Yosemite school district	Lease of site for schoolhouse	Dec. 31, 1936	None.
Curry Camping Co.	Hotel camp	Dec. 31, 1939	(?)
Yosemite National Park Co.	Hotels, chalets, inns, camps, transportation service, stores, and dairy.	Dec. 31, 1938	(?)
Louise B. Patterson	Tenaya Lake Girls' Camp	Dec. 31, 1924	\$10

<sup>1</sup> Permit fee fixed at 4 per cent of gross revenue; \$250 minimum.

<sup>2</sup> 22½ per cent of operating profits after deduction of 6 per cent on physical investment.



*Lease, special-use, and water-power permits under act of February 7, 1905, segregating lands from Yosemite National Park and placing same in Sierra and Stanislaus National Forests.*

Period	Name and privilege granted	Compensation exacted
Intermediate period.	Yosemite Valley R. R. Co. Lease dated Sept. 5, 1905, to construct and operate electric railway along Merced River to park boundary.	<sup>1</sup> \$1,000
Perpetual....	City and county of San Francisco. Congressional grant, Dec. 13, 1913, rights of way for Hetch Hetchy water supply.	Variable.

<sup>1</sup> Per annum, on demand of Secretary of Interior.

Dr. Frederick L. Stein, who for the previous five years had been operating the hospital and medical service under contract with the service, withdrew in October, 1923, and a similar contract was entered into with Dr. Claude H. Church. Doctor Church continued to operate the hospital and medical service, augmented by the dental service, very satisfactorily throughout the year.

Hospital facilities continued to be inadequate, as called to your attention in previous reports, and it is hoped that the item for a new hospital contained in the estimates submitted to the Bureau of the Budget for 1926 will be given favorable consideration. During the year a total of 2,037 cases was treated by the medical service, of which 126 were hospital cases. In connection with this, 4,198 office calls were attended to; 1,136 house calls were made; 280 accidents were reported; 159 operations were performed, of which 5 were performed under general anaesthetic; and 6 deaths and 5 births were reported during the year.

Dental services were furnished during the month of June by Dr. G. A. Hodges, and the months of July and August by Dr. J. C. Smith, under the general supervision of Dr. Church.

#### TRAVEL

For the first time since 1918 travel figures for the year failed to show an increase over the preceding year. This can be attributed directly to the drought conditions existing throughout the State, the foot-and-mouth epidemic and its attendant unfortunate publicity, and the forest-fire scare, the latter two of which for unwarranted reasons creating impressions from time to time, not only within the State but all over the United States, that the park was closed or at least travel was subject to unreasonable restrictions. Although at no time during the year for any reason whatsoever were any special restrictions placed on travel or use of the park nor any restrictions contemplated, and in spite of repeated denials through all sources and channels available, it was impossible to successfully combat the wave of rumors that swept the State from time to time throughout the year. Considering the condition of hysteria existing, it was surprising that travel held up as well as it did and that the final figures did not show a far greater decrease as compared with last year than they did.

The following table gives an analysis of the travel and also a comparison of the figures recorded for the previous year:

#### *Automobiles and motorcycles*

Entrance	Road	Number of automobiles	Number of people	Number of motorcycles	Number of people
<i>Season 1923</i>					
Alder Creek.....	Wawona.....	13, 831	45, 315	101	134
Crane Flat.....	Big Oak Flat.....	6, 381	21, 043	30	42
Merced Grove.....	Coulterville.....	118	381		
Aspen Valley.....	Tioga.....	3, 322	10, 249	2	4
Tioga Pass.....	do.....	3, 426	10, 495	7	8
Yosemite.....	Various.....	155	386	2	2
Total.....		27, 233	87, 870	142	190
<i>Season 1924</i>					
Alder Creek.....	Wawona.....	10, 655	33, 860	27	44
Mariposa Grove <sup>1</sup> .....	do.....	9, 114	29, 596	5	7
Crane Flat.....	Big Oak Flat.....	6, 955	21, 846	37	52
Merced Grove.....	Coulterville.....	63	197	2	4
Aspen Valley.....	Tioga.....	2, 630	7, 855	7	11
Tioga Pass.....	do.....	3, 272	9, 833	5	8
Yosemite.....	Various.....	125	316		
Total.....		32, 814	103, 453	83	126

<sup>1</sup> No record kept in 1923.



*Other means of transportation*

	1923	1924
Travel by auto stages other than via El Portal Road	4,908	<sup>1</sup> 14,327
Travel via Yosemite Valley R. R. and El Portal Road	26,607	20,169
Travel via Hetch Hetchy R. R.	7,188	6,549
Travel by wagon, horseback, and on foot	3,283	1,446
Total travel other than by private cars	41,986	42,941

<sup>1</sup> Includes stage travel into Mariposa Grove not recorded in 1923.

## SUMMARY

	1923	1924
Travel by private automobiles	87,870	103,453
Travel by motor cycles	190	126
Travel by auto stages other than El Portal	4,908	14,327
Travel by wagons, foot, horse, etc.	3,283	1,446
Travel by Yosemite Valley R. R.	26,607	20,169
Travel by Hetch Hetchy R. R.	7,188	6,549
Total	130,046	<sup>1</sup> 146,070

<sup>1</sup> Total count through all stations, including duplications of 49,176.

## FISH AND GAME

Drought conditions existing throughout the year have critically affected fish life throughout the park. Streams by the dozens that ordinarily flow throughout the year and in which fish life is plentiful have ceased to flow and, although much has been done to salvage living fish from these creeks as they gradually dry up and transplant them in live waters, the loss has been terrific, and even with a fish hatchery available to furnish a plentiful supply of fry for future planting, it will take years to replenish the losses that have been suffered.

Deer and bear apparently are increasing in large numbers.

## IMPORTANT EVENTS AND OCCURRENCES IN 1924

1. In August, 1923, the State Highway Commission installed a convict camp at Briceburg to begin the construction of the last link of the Yosemite all-year highway and have prosecuted the work vigorously since that time. It is estimated that this road will be completed by the spring of 1926.

2. Extreme drought conditions obtained not only locally but throughout the State during the entire year.

3. In March, 1924, a few cases of foot-and-mouth disease appeared in Contra Costa County and the epidemic spread rapidly in spite of efforts of the authorities to control it, to other sections of the State, it becoming particularly virulent in Los Angeles and Merced Counties. Its virulence and seriousness as the disease affects cloven-hoof animals was given uncontrolled publicity throughout the State and nation with the result that a mad frenzy of fear was created throughout the State, resulting in embargoes against travel and shipments that were felt seriously by every industry. This seriously affected park travel.

4. With the shortage of precipitation during the winter and spring months it was only natural that the soil would become dry earlier than usual and present a fire hazard, particularly in the mountain areas, at a date considerably in advance of the fire season of the normal year. Forest fires did occur some weeks before normally such occurrences take place. From July 1 on I seriously doubt if the fire hazard was any greater than in any normal year. However, with the coming of July a frenzy of pessimism similar to that existing during the early stages of the foot-and-mouth epidemic, swept the State and uncontrolled mediums of publicity made it appear not only within the State, but throughout the United States, that California was on the verge of complete cremation. All kinds of restrictions were placed on the utilization of the mountains by campers and tourists, even to the extent of preventing camping entirely in certain areas, and the closing of roads.

5. The approval in June, 1924, of a contract with Gutleben Bros., of Los Angeles, for the construction of an administration building, marked an important step forward in the development of the proposed administrative center.

6. The donation of \$70,500 by the Laura Spelman Rockefeller Memorial for the erection, equipment, and maintenance of a park museum, came as a most appreciated gift. Not only will this permit a proper housing of our museum exhibits and allow for a more effective and extensive operation of educational work, but will bring a step nearer the completion of the new park administrative center, of which this building will form a part.

7. The approval by the governor of the State of California of the plan to erect a State fish hatchery in Yosemite Valley marks the end of seven years of negotiation and effort to secure the necessary assurance of the proper stocking and restocking of the streams and lakes of the park.

8. The Brooklyn Daily Eagle party, consisting of 52 persons, on its national park development tour, visited the park between July 17 and 20. This party, moving from

Yosemite to Tahoe over the Tioga Pass route, represented the largest organized party to take that tour since the inauguration of the Tahoe-Yosemite stage service in the park. During the party's visit, a tablet was erected at Tioga Pass on July 20, commemorating the successful labors of certain public-spirited citizens in the securing of the Tioga Road and its donation to the people of the United States.

9. The system of hikers' camps, inaugurated in 1923, was continued and extended in 1924. Where three camps were operated in 1923, five were operated in 1924, located, respectively, at Little Yosemite Valley, Merced Lake, Booth Lake near Tuolumne Pass, Tuolumne Meadows, and Tenaya Lake. These camps were placed at such distances as to enable hikers to readily pass from one to another in a day. Simple but comfortable accommodations were furnished at reasonable rates. This system seems to offer a possible solution for the making of the back country more accessible to the average visitor.

### SEQUOIA NATIONAL PARK

JOHN R. WHITE, Superintendent, Giant Forest, Calif.

#### GENERAL STATEMENT

This park of 252 square miles embraces the largest forest of big trees as well as glacial valleys, mountain meadows, mountains, rivers, and lakes. From 1,300 to nearly 12,000 feet in altitude, the park preserves flora and fauna from the Sonoran to the Alpine zones. It is, perhaps, the most easily reached of all national parks; the lower levels touch the apple orchards and citrus groves of the San Joaquin Valley and a perfect State highway reaches the park boundary. The park was created in 1890 through the efforts of public spirited men of Tulare County, of whom only Col. George W. Stewart and Mr. Jesse Agnew are now living. The growth of the park has resulted in national and world-wide travel, which has increased from 1,251 visitors in 1908 to 34,468 in 1924.

#### PRINCIPAL EVENTS OF 1924

*Visit of Appropriations Committee.*—The visit of Congressmen Madden, Cramton, and Barbour, members of the Appropriations Committee, in May, 1923, may be included in this year's events, productive as it was of appropriations which have enabled long-needed improvements. The increase of nearly \$20,000 in the appropriation for general park purposes permitted the organization of an efficient administrative office force without which the park was in the condition of a motor with inadequate battery. Improvement in every direction—roads, trails, buildings, etc.—has followed the appropriation.

Thirty-nine thousand five hundred dollars were appropriated for a sewer system at Giant Forest which by the end of September, 1924, was four-fifths completed and in such economical manner that it is hoped to return a substantial sum to the Treasury and thereby show the appreciation of all workers to Messrs. Madden, Cramton, and Barbour who placed confidence in us.

*Museum organization.*—Second in importance may be placed the organization of a museum at Giant Forest, housed at present in two tents. Judge Fry has already made a collection of 300 flowers, shrubs, and tree specimens, all exquisitely mounted. There are also animal and other exhibits.

*Travel.*—Travel showed a 15 per cent increase over 1923 when nearly all other California resorts and parks showed a decrease. A total of 34,468 visitors was registered as compared with 30,158 in 1923.

This increase is a tribute to the growing popularity of the park as it came despite the foot-and-mouth disease, financial depression, false reports of forest fires, and the great drought. There was a marked increase of national travel as well as that from southern and northern California.

*Great drought.*—The great drought, the most severe in American occupation of California, has affected the park in many ways and has made extra exertion necessary to prevent fires, maintain roads, and provide water.

*Park headquarters established.*—The establishment of park headquarters at Alder Creek (elevation 1,600 feet) in October, 1923, gave the park a permanent administrative unit for the first time in its 33 years' history.

*State highway finished.*—On January 12, 1924, the broad and easy graded State highway from Three Rivers, 6 miles, to the Middle Fork boundary,  $1\frac{1}{4}$  miles from Alder Creek headquarters, was completed and has opened a new and all-year entrance to the park.

*Forest fires.*—Although devastating forest fires raged around the park in the Sequoia National Forest and the Sierra National Forest, we have, at the end of August, passed through the driest season in California history without any forest fire worth recording.

*Park enlargement.*—The opposition of residents of the San Joaquin Valley to the Barbour bill for the enlargement of the park has given the project a temporary setback, which can only be overcome when valley residents are shown that the national park's policy of complete conservation for recreational and educational purposes is of more benefit to them than a policy which permits destruction of scenery and recreational areas or the benefit of grazing, lumbering, and other interests.

*Wild life.*—All wild life has been protected and is increasing in numbers and tameness. Twelve mountain lions were killed—11 by State Lion Hunter Bruce and 1 by Ord Loverin. Park rangers accompanied Mr. Bruce on his hunts.

#### ADMINISTRATION, ORGANIZATION, AND PERSONNEL

Probably it is safe to say that more progress in administration and organization was made during the past year than in the other 33 years of the park's history. This was possible owing to establishment of permanent headquarters at Alder Creek, 1,600 feet elevation, 7 miles from Three Rivers and  $1\frac{1}{4}$  miles from the end of the State highway at park boundary. The concentration of personnel and equipment at a permanent headquarters has placed the park on a firm foundation and enables economical operation and organization.

The administrative personnel now consists of a superintendent, a chief clerk, a bookkeeper, and a stenographer-typist, with temporary storkeeper, timekeeper, and telephone operators.



## PROTECTION—PARK RANGER FORCE

The park ranger force consists of a chief ranger, 1 permanent ranger, and 13 rangers when actually employed, of whom 5 may be considered on permanent duty and the remainder employed as long as funds are available to do maintenance work.

Last year we boasted that no complaints had been made against the ranger force. After the 1923 annual report had been forwarded, a serious complaint was lodged against an assistant chief ranger for neglect in failing to assist promptly a park visitor whose automobile was mired some 4 miles from Giant Forest. After thorough investigation the ranger was found at fault and separated from the service. Since that occurrence no other complaint has been made, but compliments on courteous and efficient service have been many. This is the more noteworthy when it is considered that 20 arrests were made for violation of park regulations and sentences imposed by United States commissioner in 20 cases. The ranger force now has an enviable reputation for courtesy and efficiency.

Rangers planted 210,000 trout fry, chiefly in lakes, owing to drying up of streams.

## GRAZING

One thousand and eighty-six cattle were grazed by 12 permittees, an increase of 90 head, owing to permit on Caboon Meadow (southern section) being again issued. This is largely on a private holding and in a remote portion of the park practically unused by visitors. Owing to the drought, pressure was brought to bear on this office to open additional grazing areas or increase the number of cattle under present permits. In view of the need of preserving feed for stock of pack outfits, as well as camp sites free from interference by cattle, the pressure was resisted. The further reduction of grazing in view of increased use of the park by visitors is one of the most important problems confronting this office.

## FOREST FIRES

At the time of writing this report we have passed through the larger part of the driest season in California history without any forest fires worth recording. The credit for this is due largely to the park rangers, who have been active on preventive patrols and in educating visitors even to the point of arresting them for carelessness with camp and cooking fires. Seventeen arrests were made for this offense and in 17 cases Judge Fry imposed fines.

## UNITED STATES COMMISSIONER

Twenty complaints for violation of regulations were filed and 20 convictions were obtained, chiefly in camp-fire cases. Visitors hailed before Judge Fry have almost uniformly expressed appreciation of the sympathetic attitude of the court.

## TRAVEL

Detailed statistics are given in attached summary. Eleven thousand and thirty-two autos and 34,468 visitors entered the park, a 15 per cent increase in visitors over 1923, when 9,796 autos and 30,158 visitors entered the park. The increase of 15 per cent over 1923 is an indication of healthy growth when nearly all California parks and resorts have shown a decrease. The increase of park travel under present conditions is just an index of what may be expected in 1925 with the opening of the Generals' Highway.

## PUBLIC AUTO CAMPS

The 343 prepared camp sites at Giant Forest were supplemented by 34 additional at a new camp, Pinewood, on the Sherman Road. However, the addition was in part offset by closing 15 camps at Giant Forest, Circle, and Center camps to any but emergency use. This follows the general plan of relieving congestion in the heart of Giant Forest, restoring landscape conditions, and providing space to handle traffic and holiday crowds.

In addition to nearly 400 prepared camps at Giant Forest, we have several hundred camps at outlying stations with partial water and sanitation provided.

## NATURAL FEATURES AND WILD LIFE

*The big trees.*—Further protection was given the park's chief attraction by warning signs and low posts around the most visited sequoias. It has been found that a circle of rough puncheons, only a foot or two above ground and not obstructive to the view, is almost as effective as a man-proof fence. Visitors have obeyed signs asking them not to pass inside the circles or touch the trees.

*The forests.*—There appears to be no further extension of insect infestation in the pines and firs which was subject to control in 1919-20. It is believed that the balance of nature is being reestablished, and that further campaign against the pine beetle may be unnecessary.

However, there is urgent need for a study of general forest conditions and the disposition of dead and down timber and brush. The protection given the forests by the Park Service has prevented in large measure those smaller brush and forest fires set by man and natural causes, which cleared away dead underbrush and timber. There is reason to believe that if we do not pursue the policy of "light burning" we must put into effect some plan which will have the same or better effect in the forests. Trees, brush, herbage, and all live growth may be considered as protection for the snowfall and therefore of the watershed. But dead trees, brush, and herbage litter the ground, prevent new growth, and give off heat which melts the snow and dries up moisture.

*Fish.*—The great drought depleted our fish. Many streams are dry; others are dry but for occasional pools. In many places fish have been caught by hand and transferred to deeper waters. It will probably be necessary to close some streams next summer. Meanwhile we are stocking lakes and streams that have not failed. During the past summer rangers planted 210,000 trout fry, chiefly Loch Leven, which thrive in lakes and sluggish waters.

At present we follow State law with a limit of 25 fish or 10 pounds and 1 fish. This is too liberal for heavily fished park waters, and the question of changing the limit will be taken up with State authorities who, in ceding authority in the park, reserved the right to collect fishing licenses.



*Animal and bird life.*—Deer seem more tame than ever, as many as 21 at one time being counted on Round Meadow. Undoubtedly the killing of the mountain lions is the chief cause for this increase, although credit is also due the ranger force for prevention of poaching. Eighteen bear, including two sets of cubs, have been counted at the bear pit. Mountain beaver are at work on the little stream that meanders through the camps at Giant Forest. In short, all animal and bird life seems to be prospering and increasing.

#### MISCELLANEOUS SERVICE TO PUBLIC

*Giant Forest museum.*—This spring the collection grew so fast that it could no longer be housed in the administration building; a tent was put up near by, and this soon being filled by Judge Fry's specimen cases, another tent was placed alongside and this is also filled. Thousands have visited our "tent museum" this season and have been able to identify the trees, flowers, and other natural objects of the forest. Of the 1,211 flowers to be found in the park, Judge Fry has now mounted in exquisite manner over 300 different species, including of course all the common ones. There are also animal and butterfly exhibits together with Indian relics donated by Jason Barton of Three Rivers and others.

There is a crying need for a museum building to house these collections, but limit on appropriations prevented its inclusion in estimates for fiscal year 1926. However, we have already collected \$696.82 toward the building and life under the Big Trees makes us both patient and hopeful. Mr. Myron Hunt, landscape architect of Los Angeles, has promised assistance in designing a museum building.

*Nature-guide service.*—Both in museum collections and in nature-guide walks and talks, Judge Fry was fortunate in having the services of Messrs. Kobs and Sissons, amateur naturalists but professional lovers of the out-of-doors and members of the southern California society "Friends of Our National Parks."

*Library.*—Through the cooperation of Miss Gretchen Flower, county librarian, the branch library so successful in past seasons was again conducted. The books on nature subjects were eagerly sought. The further extension of library service is very necessary. There were 400 books in the library and the circulation was 2,553.

*Religious services.*—Church services and Sunday school were held regularly, chiefly through the untiring efforts of Mrs. Caro Bennett, Mrs. Joseph Herd, and Miss Ella Evans.

*Pageants.*—Garnet Holme and his Mountain Forest and Desert Players presented "Rip Van Vinkle" at financial loss, but with an unsurpassed setting. The annual Giant Forest play was also presented by the local people.

#### PUBLIC OPERATORS AND UTILITIES

*Kings River Parks Co.*—A change of management at the Giant Forest Lodge has resulted more than favorably. Mr. E. H. Maize, confronted with the need of complete reorganization of personnel and with the losses of five seasons operations, has nevertheless shown a substantial profit despite the generally slack conditions which Giant Forest shares in part with all California resorts. Statistical columns show comparisons with past years. A total of 100 guests may now be accommodated at the Giant Forest Lodge.

*Sequoia National Park Stage Co.*—Despite unfavorable conditions the company had a successful season and carried 587 passengers as compared with 479 last year. The company also ran a stage through the park to Mineral King and carried 79 passengers on that route.

The operations of the other park utilities and permittees were satisfactory.

#### CONSTRUCTION AND MAINTENANCE

The busiest construction season in Giant Forest history began in mid-June when fiscal year 1925 funds were made available and by the end of September all work except the usual fall maintenance and clean up was discontinued.

*Sewer system.*—The sewer system (fiscal year 1925, \$39,500) was practically completed and well within the appropriation. It consists of 13,500 feet of 8 inch, 6 inch, and 4 inch pipe lines with a 20,000 gallon settling tank of concrete and 3 filter beds. Construction of 6 large and eight small comfort stations to connect with sewer system will be practically finished by September 30.

*Garbage incinerator.*—An incinerator of new design by Mr. H. B. Hommon, United States Public Health Service, was built at a cost of \$1,500. It is expected that the successful operation of this incinerator will make it a standard for other parks.

*Water system.*—In connection with sewer work extensive additions were made to Giant Forest water system. The new system installed last year worked perfectly and supplied unlimited water despite the drought.

*Road construction.*—Progress was made on the Generals' Highway under direction of Chief Civil Engineer Goodwin and General Foreman James B. Small with whom this office has cooperated in every way. About 6½ miles of new road have been built since work began in 1921 and over 2 miles remain before the new road ties on to the old Smith grade. It is hoped that the road may be used next year. Construction has been of economical nature and with such careful regard for landscape features that Mr. Small's work has brought forth praise from all visitors and officials.

*Maintenance.*—There has been much work done on repairs and improvements to existing roads, trails, buildings, telephone lines, etc., for which space does not permit the recital.

*Civil engineering division.*—We are indebted to Chief Civil Engineer Goodwin for information and assistance in securing surplus property and in designing and ordering of signs.

*Sanitary engineering division.*—Mr. H. B. Hommon, of the United States Public Health Service, continued to advise and assist us on questions of sanitation, water supply and garbage disposal.

*Landscape engineering division.*—Mr. D. R. Hull has continued his advice and design of such few buildings as are to be built in fiscal year 1925 program. It is unfortunate that park appropriations have not in the past permitted an intensive study of landscape problems at Giant Forest and neighborhood. The restoration to natural conditions of camping and other areas that have been denuded of flowers, shrubs, and almost all vege-

tation except trees, is a matter for careful study; and so is the future development of camp grounds and public areas in such way that all natural growth may be preserved and when possible even increased in beauty.

#### RECOMMENDATIONS

Practically all recommendations may be summed up in one paragraph—that appropriations be given the park as estimated. The park has passed the swaddling stage and is in lusty youth, crying for the rich arterial flow of good communications, and for the food which will enable it to build good bone, muscle, and nervous system: suitable buildings, camp grounds, and personnel. Money is that food and it will not be wasted. To deny it to a young and rapidly growing park is to stunt growth and spoil one of Uncle Sam's most promising children.

#### CONCLUSION

In concluding this report it is possible to reflect with pleasure on the progress of the past year, progress which has been made because of the fine assistance given by all employees no less than because fiscal year 1925 appropriations are in some measure commensurate with the park's needs.

#### Statistical summary

	1924		1923	
	Automobiles	Visitors	Automobiles	Visitors
Travel:				
By private automobiles.....	10,816	33,402	9,499	28,946
By stage.....	216	334	297	602
By other means of conveyance.....		732		610
Total.....	11,032	34,468	9,796	30,158
Travel by entrances:				
Giant Forest Road, Cedar Creek station.....	5,240	16,745	5,944	19,026
Middle Fork Road, Alder Creek station.....	3,073	9,834	1,501	4,812
Mineral King Road, East Fork entrance.....	2,719	7,314	2,351	5,710
South Fork Trail, Clough's Cave station.....		389		386
Trails, all sources.....		186		224
Total.....	11,032	34,468	9,796	30,158
Hikers to forest during winter season.....		442		437

	1924	1923		1924	1923
Revenues (net, all sources, fiscal year).....	\$25,858.21	\$23,425.62	Miscellaneous:		
Automobile fees, travel season.....	8,983.50	10,842.35	Roads, general (miles).....	56.5	56.5
Appropriations:			Trails (miles).....	268.3	268.3
General.....	\$55,000.00	\$32,000.00	Telephone lines (miles).....	146	146
New construction.....	\$81,000.00	\$46,000.00	Flush toilets.....	24	14
Telephone service (long distance).....	1,390	1,325	Pit toilets.....	144	76
Total calls during season (local).....	9,092	9,986	Number public camp sites.....	362	343
Total collections (commercial).....	\$510.60	\$343.12	Buildings:		
Cases before United States commissioner:			Giant Forest.....	10	10
Total number cases.....	20	9	Outside (ranger stations).....	10	10
Convictions.....	20	5	Alder Creek.....	11	6
Total fines imposed.....	\$124.50	\$40.00	Water system (miles).....	11	11
Nature-guide service:			Sewer pipe line (miles).....	2½	
Press bulletins issued.....	7	7	Personnel classification:		
Museum specimens prepared.....	306	25	Administration—		
Talks on subject.....	33	40	Permanent (12 months).....	4	4
Walks conducted.....	17		Temporary (4-6 months).....	5	5
Forest fires:			Protection:		
Minor.....	3	9	Permanent (12 months) rangers.....	6	3
Serious (outside park—burned to boundary).....	1	1	Temporary (4-6 months) rangers.....	7	9
Burned-over area (acres).....	20	3¾	Maintenance and construction:		
Cost to extinguish.....	\$41.82	\$565.75	Permanent (12 months).....	1	1
Grazing:			Temporary (4-6 months).....	60	25
Number cattle.....	1,086	996	Engineering—Middle Fork Road (12 months).....	20	20
Number permittees.....	12	11			
Area occupied (acres).....	51,740	45,500			
Fish planted.....	210,000	385,000			
Private holdings in park:					
Number.....	9	9			
Number acres.....	1,400	1,400			



*Public operators.*

	1924		1923	
	House-keeping	Lodge	House-keeping	Lodge
KINGS RIVER PARKS CO.				
Accommodations for guests.....	200	100	175	85
Guests during season:				
June.....	632	785	557	820
July.....	3,157	826	3,479	1,882
August.....	2,480	799	4,084	1,865
September.....	389	137	938	628
Totals.....	6,658	2,547	9,058	5,195
SEQUOIA STAGE & TRANSPORTATION CO.				
Passengers carried.....	587		479	
Freight carried.....	88 tons 1,237 pounds		269 tons 685 pounds	

## GENERAL GRANT NATIONAL PARK

JOHN R. WHITE, Acting Superintendent, Giant Forest, Calif.

This small but popular park was created at the same time as the Sequoia in 1890. Four square miles in area, it preserves a superb grove of sequoias as well as fine stands of sugar and yellow pine and fir. Flowery meadows and little streams bordered by dogwood and azalea enhance the beauty of the park; it is an oasis of beauty in a region desolated by the axe and fire. General Grant National Park was saved to posterity by the same public-spirited citizens of Tulare County who preserved the Sequoia National Park, from which it is distant about 60 miles by road or 16 by trail. At nearest points the park boundaries are but 5 miles apart as the crow flies. Even by road General Grant park is less distant from the permanent headquarters of both parks at Alder Creek than are many outpost stations in Yellowstone, Yosemite, or Glacier. A marked economy to the Government will result from centering all administrative and storehouse operations for both parks at Alder Creek. It would be an advantage to the park if appropriations were made jointly for both parks and if rangers and employees were interchangeable.

Travel in 1924 was at one time entirely stopped by fire in the Sequoia National Forest about 4 miles from park boundary; following this it was diminished by false reports of fires in the park and that it was closed to travel. Nevertheless 9,118 autos and 35,020 visitors entered as compared with 12,136 autos and 46,230 visitors in 1923.

The fiscal year 1925 appropriations contained no items for urgently needed construction. The limit on 1926 estimates of \$12,000 again precludes construction. Considering the travel and increasing needs of the park provision should be made for the construction of a suitable entrance and checking station and other improvements and additions.

In May, 1924, the holdings of the Kings River Parks Co., the Sanger Meat Market, and Gordon Day Service Station were all consolidated and transferred to the Pinehurst Resort Co. Operations were conducted under the severe handicaps of a late opening and a bad travel and resort season. Nevertheless, the service was much improved and future season's operations may be hopefully anticipated.

General conditions in the park were much improved; water was piped to the Big Tree Grove, and lunch tables and benches provided there; general police and sanitation were bettered; additions were made to the water and sanitation system installed last year and comfort stations constructed; additional camp grounds were opened.

The relations with the rapidly growing private holding of Wilsonia, 160 acres squarely in the middle of the park, continued harmonious and Mr. Andy Ferguson, the manager, met Chief Ranger Decker and the acting superintendent more than halfway on the many mutual problems involved.

The urgent needs of the park are appropriations for needed improvements, construction of the interpark roads, the Generals' Highway, and closer relations with the headquarters of both parks now established at Alder Creek, Sequoia National Park.

*Statistical summary*

Travel	1924		1923	
	Auto-mobiles	Visitors	Auto-mobiles	Visitors
By private automobiles.....	9,118	33,802	12,136	44,117
By stage.....		398		489
By other means of conveyance.....		820		1,624
Totals.....	9,118	35,020	12,136	46,230



## Statistical summary—Continued

	1924	1923		1924	1923
Revenues (net) (all sources, fiscal year)-----	\$3,929.02	\$4,107.37	Cases before United States commissioner—continued.		
Automobile fees, travel season-----	\$3,171.98	\$4,116.49	Total fines imposed.....	\$42.50	\$30.00
Appropriations:			Fish planted-----	None.	50,000
General-----	\$14,175.00	\$10,000.00	Approximate number wild animals in park:		
New construction-----	None.	\$40,000.00	Deer-----	500	400
Cases before United States commissioner:			Bear-----	None.	2
Total number of cases---	11	3	Lion—periodically-----	4	4
Convictions-----	11	3	Numerous other small animals.		
Violations of regulations---	11	5			

## General figures of interest

Roads-----miles--	13.5	Number of park buildings-----	3
Trails-----do-----	13	Prepared public camp sites-----	450
Telephone lines-----do-----	5.5	Pit toilets-----	49
Sewer line pipe installed-----feet--	11,000	Rest-room comfort stations-----	4
Water line pipe installed-----do-----	33,000		

Public operators	1924		1923	
	House-keeping	Lodge	House-keeping	Lodge
<b>PINEHURST RESORT CO.</b>				
Accommodations for guests-----			115	40
Guests during season:				
June-----	74	153	446	153
July-----	185	155	2,627	413
August-----	69	120	2,641	260
September-----	50	47	534	145
Total-----	378	475	6,248	973

## MOUNT RAINIER NATIONAL PARK

O. A. TOMLINSON, Superintendent, Longmire, Wash.

## GENERAL STATEMENT

Mount Rainier National Park was created by an act of Congress approved March 2, 1899, and exclusive jurisdiction of the territory so set aside was ceded to the United States by an act of the Legislature of the State of Washington approved March 16, 1901. Exclusive jurisdiction of the reservation was accepted by act of Congress June 30, 1916.

The park is roughly a square, about 18 miles on a side, and contains 324 square miles. It is located in the western part of the State of Washington, immediately west of the Cascade Mountains and about 40 miles southeasterly from the southern end of Puget Sound.

Longmire Springs, distant 6½ miles by automobile road from the Nisqually entrance, is the headquarters within the park of the superintendent and of the Rainier National Park Co.

## ADMINISTRATION

The superintendent administers the park affairs, aided by an assistant superintendent, chief ranger, 5 permanent rangers, and 1 clerk-accountant. During the summer travel season this force is increased by 17 temporary rangers, 3 clerks, 2 telephone operators, and a maintenance and construction force of about 50 men. The United States commissioner, Hon. Edward S. Hall, tries all cases for violation of the park rules and regulations. During the year 6 cases for violation of the rules and regulations were taken before the commissioner, resulting in five convictions.

## HOTEL AND TRANSPORTATION SERVICE

Hotel, camp, and transportation services of the park are conducted by the Rainier National Park Co., a corporation directed by business men of Seattle and Tacoma. The company has expanded to meet the growing travel until it now has approximately \$600,000 invested in hotel, camp, and transportation equipment.

**Hotels.**—National Park Inn at Longmire Springs and Paradise Inn in Paradise Valley are the two hotels. Paradise Inn is within easy walking distance of the glaciers and snow fields and is but four hours' drive from Tacoma and five hours' drive from Seattle.

*Camps.*—Two camps, one in Paradise Valley and one in the White River section of the park, are operated. Retail stores carrying groceries and campers' supplies and lunch-counter service are maintained at both camps and also at Longmire.

*Transportation.*—Stages and touring cars were operated daily from Tacoma and Seattle to Paradise Valley, the round trip from both cities being made in a day. The company also operated stage service connecting with the Chicago, Milwaukee & St. Paul trains at Ashford to and from Paradise Valley.

*Guide service.*—The company furnished guide service for trips to points of interest. Experienced Swiss guides conduct the parties on the summit climb.

#### RAILROADS AND HIGHWAYS TO PARK GATEWAYS

The Mountain Highway connects the Nisqually, or southwestern entrance, with the Pacific Highway at Tacoma and with other State roads. The Naches Pass Highway connects the Puget Sound cities with the White River, or northeastern entrance. Both roads are maintained by the State in excellent condition.

Connecting the Carbon River entrance with the State highway system, a 2-mile section of road in Pierce County has not been opened for travel, preventing a great many people from enjoying that part of the park.

The opening of an automobile road to Ohanapecosh Hot Springs, less than one-fourth mile outside the northeast corner of the park, has added another serious problem to the many now confronting us. Private interests are now constructing 6 miles of road from the Forest Service and Lewis County road at Clear Fork to the Hot Springs and the road will be opened this fall. This means that another season will bring thousands of visitors into the park where, due to its former inaccessibility, only a few hundred came in. That section of the park has no facilities whatever for the accommodation of visitors.

The Chicago, Milwaukee & St. Paul Railway operated two trains daily during the season to its Ashford terminal, 6½ miles from the park entrance. This season, a "National Park Limited" train was operated in addition to the local train, giving park passengers excellent service. Rainier National Park Co. stages connect with both trains for points within the park.

#### WEATHER CONDITIONS

During the fall and early part of the winter weather conditions were favorable for travel but after the first of February rain instead of snow kept many visitors away. The exceptionally dry and early spring encouraged early travel but by the beginning of vacation time in June the absence of moisture showed in the unusual early smoky conditions. The remainder of the season a great deal of unsettled weather discouraged many visitors. Two week-ends in July and four of the five week-end periods of August were either cloudy, foggy, or rainy. From August 9 to 20 there were only two clear days. This unfavorable weather during the month of heaviest travel kept thousands of local visitors away. Snow had entirely disappeared from the vicinity of Paradise Inn by July 2, fully three weeks earlier than in normal years.

#### FREE PUBLIC CAMPING GROUNDS

Camp grounds with running water, toilets, tables, etc., are maintained at Longmire Springs and Paradise Valley. These camps will accommodate from 400 to 500 people at a time. In the northeastern section of the park the White River public camp will accommodate about the same number. Small camping sites without improvements are maintained at Hansen's camp, Kantz Creek, and Van Trump camp on the Nisqually road. These unimproved camps were extensively used the past year by the large numbers of people who could not find accommodations at the Paradise and Longmire camps.

A large increase in the number of visitors desiring to camp out was noted this season. Ninety per cent of all visitors coming to the park brought in their own equipment and many were unable to find comfortable camping conditions owing to limited facilities.

#### NATURAL FEATURES OF THE PARK

*Glaciers.*—Twenty-eight glaciers covering 48 square miles of area, add greatly to the glory of Mount Rainier. Six of these rivers of moving ice average a greater size than the glaciers of the Alps. All of the glaciers are receding—the Nisqually at the rate of 50 feet a year.

*Forests.*—Over two-thirds of the national park is covered by forests. All zones of forest growth from the dense lower slope forests to the gnarled, wind-swept timber line trees, are represented.

*Flowers.*—Some 532 flowering plants and ferns contribute to the annual flower show on Mount Rainier. Before the snow has melted in the high meadows the avalanche lilies and western anemones push their way through and soon cover the hillsides in profusion. Later in the season the parks are a mass of color. The height of the flower season came late in July this year due to the early spring.

*Wild life.*—Bear, deer, elk, and goat are seen much more frequently now in the park than in former years. Deer and elk are often seen around Longmire, bear in Paradise Valley, and goat in the little-visited sections of the park.

*Fish.*—One hundred and eighty thousand trout were planted in park waters this year, and several thousand more will be planted this fall. Eastern brook trout, weighing up to 4 pounds 6 ounces, have been taken from Lake Louise. Lake George has, as usual, also provided fine fishing.

#### EDUCATIONAL SERVICE

The nature-guide service, though only two years old, has become one of the most appreciated features of the park. Purely educational in nature, the work was carried out by means of field trips conducted by park naturalists, illustrated lectures on the natural features of the region, exhibits of wild flowers, mounted birds and animals, and other natural history specimens, information offices with reference libraries and weekly bulletins dealing with subjects of current interest.



## PARK MAINTENANCE

Notwithstanding the increased expenditures made for the maintenance of roads, trails, camp grounds, buildings, etc., these facilities are gradually breaking down and deteriorating under the tremendous usage which they are subjected. The limited facilities of the park were not designed to accommodate the demands now made.

## IMPROVEMENT WORK

*Nisqually Road.*—The widening and improving of the Nisqually road between Narada Falls and Paradise Valley was continued and that section of the road is now 20 feet wide. The widening and surfacing of the Narada cut-off was completed. The remaining section of the Nisqually road—which will not permit of two-way travel for a distance of some 1,500 feet near the Kicksecker cut-off—will be widened late this fall or early next spring.

*Carbon River Road.*—The contractor completed construction work on the 8 miles of road in the Carbon River section of the park. This road terminates near the snout of Carbon Glacier. From Ipsut Creek to the end, a distance of  $2\frac{1}{2}$  miles, the road was constructed for one-way travel. Due to serious damage by the flood of last February a section of this new road, 2 miles from the entrance, is in very poor condition. The damaged section can not be repaired until the road is protected from further encroachment from the river. River revetment work will be done this fall.

*White River Road.*—This road was badly damaged by the flood of last February, necessitating an expenditure of approximately \$3,000 to make repairs sufficient for opening that section of the park. The road was originally constructed by a mining company before the park was set aside and due to its location has never been in good condition as it was not considered advisable to expend more funds than necessary to make it passable.

*Trail system.*—The 150 miles of the Wonderland Trail and 20 miles of other trails were repaired and kept in fair condition. Owing to lack of funds it has not been possible to place our trail system in first-class condition. Many sections have become badly washed or eroded, many timbered places over muddy ground and many small bridges require repairs that it was not possible to do with the limited funds. A considerable expenditure on the trail system is essential in order to place them in proper condition to accommodate the people who want to use them.

*Paradise public camp ground.*—Three thousand eight hundred feet of new road was constructed to open up additional space and connect it with the other section of the camp ground and main road. This road has increased the Paradise camp ground by about 200 per cent. A new comfort station is being constructed on the site opened up, but as yet no funds have been made available for the installation of a water supply or to take care of the sewage.

*Longmire public camp ground.*—The suspension bridge across the Nisqually River was completed and the road leading to the new site for camp grounds at Longmire was about 80 per cent completed. Owing to insufficient funds the road could not be completed, nor could the camp site be cleared and opened.

## WINTER OPERATIONS

For the first time the Nisqually Road, from entrance to Longmire Springs, a distance of  $6\frac{1}{2}$  miles, was kept open for automobile travel the entire year and National Park Inn was operated informally throughout the winter. By the use of a snow plow which operated in front of a heavy caterpillar tractor and pushed the snow to either side of the road, the road to Longmire was kept open. Visitors found ideal snow conditions within three to four hours' comfortable automobile travel from the Puget Sound cities where, due to the mild climate, a little or no opportunity is had for the enjoyment of snow sports. Nearly 10,000 people visited the park during the winter, enjoying the tobogganing, snowshoeing, skiing, and other winter sports provided by the Rainier National Park Co. The popularity of Mount Rainier National Park as a year-round playground was established last winter.

## RECOMMENDATIONS

1. *Camp grounds.*—That ample space, water supply, and comfort stations be provided for the accommodation of all visitors who want that service.

2. *Community building.*—That large buildings to provide shelter in stormy weather and to serve as a common meeting place for visitors at other times be provided for visitors in the camp grounds.

3. *Repair shop.*—That a shop for repairing equipment during winter months be constructed at Longmire.

4. *Equipment sheds.*—That shelter for park machinery and equipment which now stands out in the weather be provided.

5. *Ranger force.*—That the protective force be increased by 4 permanent and 10 temporary men to provide adequate protection to park and service to visitors.

6. *Employees' cottages.*—That three cottages for sheltering permanent employees who are required to live in the park throughout the winter be provided.

7. *Administration building.*—That an adequate building for the park headquarters be provided.

8. *Winter patrol cabins.*—That three cabins be constructed on the east and north sides of the park to provide shelter for rangers required to patrol the park during the winter for the protection of game and other park features.

9. *Superintendent's residence.*—That a suitable residence for the superintendent be provided at Longmire to facilitate park administration. He is now compelled to live at the Nisqually entrance,  $6\frac{1}{2}$  miles from headquarters and the center of all park activity.

10. *Maintenance funds.*—That sufficient funds for the adequate upkeep of roads, trails, buildings, telephone lines, public camps, and other park improvements now rapidly deteriorating under tremendous usage be provided.



## TRAVEL IN 1924

Travel for the year ended September 30, 1924, totaled 161,473 people and 38,351 private cars, which is an increase of 31 per cent in people and 39 per cent in cars over the highest previous record of 123,708 people and 27,655 cars in 1923.

The largest travel day in the history of the park was August 31, when 7,759 people and 1,914 cars registered at the four entrances. The largest travel week ever recorded was from August 27 to September 2, when 17,097 people and 4,251 cars entered. August, 1924, was the heaviest travel month, with 61,840 people and 14,860 private cars.

*Distribution of private automobiles entering Mount Rainier National Park, by States, and of total tourist travel from Seattle, Tacoma, and the various States and countries, for the travel year 1924*

State or country	Nisqually entrance		White River entrance		Carbon River and Ohanapeesh entrances		Total	
	Cars	People	Cars	People	Cars	People	Cars	People
Seattle <sup>1</sup> .....		32,687		22,401		1,967		57,055
Tacoma <sup>1</sup> .....		27,996		4,034		444		32,474
Washington.....	22,023	89,459	8,663	34,415	2,823	4,461	31,509	128,335
Alabama.....	1	14	1	13			2	27
Arizona.....	17	76		5			17	81
Arkansas.....	5	39				2	5	41
California.....	3,026	11,423	117	448	9	40	3,152	11,911
Colorado.....	34	163	5	30			39	193
Connecticut.....	12	158	2	11			14	169
District of Columbia.....	10	188	1	10		3	11	201
Delaware.....		4						4
Florida.....	12	86	1	7			13	93
Georgia.....	1	28		8		1	2	37
Idaho.....	109	444	10	43		8	119	495
Illinois.....	126	1,464	32	147		8	158	1,619
Indiana.....	27	254	6	41		3	33	298
Iowa.....	44	301	1	18		2	45	321
Kansas.....	42	236	3	16		3	45	255
Kentucky.....	3	54		5			3	59
Louisiana.....	2	45		8			2	53
Maine.....	2	21	1	9		2	3	32
Maryland.....	2	67	5	17			7	84
Massachusetts.....	29	629	1	15		1	30	645
Michigan.....	48	371	6	41			54	412
Minnesota.....	38	394	31	165		3	69	562
Mississippi.....	3	29	1	10			4	39
Missouri.....	50	373	3	21	2	13	55	407
Montana.....	74	341	12	63	1	1	87	405
Nebraska.....	34	200	5	32		4	39	236
Nevada.....	14	54		1			14	55
New Hampshire.....	1	24		1			1	25
New Jersey.....	34	355	1	13			35	368
New Mexico.....	1	9					1	9
New York.....	81	1,409	13	88		4	94	1,501
North Carolina.....		22	1	13			1	35
North Dakota.....	16	101	4	19			20	120
Ohio.....	92	717	6	31		3	98	751
Oklahoma.....	29	145		9		6	29	160
Oregon.....	1,880	7,329	54	235	7	61	1,941	7,625
Pennsylvania.....	69	947	8	30	1	5	78	982
Rhode Island.....	3	35		5		1	3	41
South Carolina.....	5	19	1	18			6	37
South Dakota.....	13	83	2	13			15	96
Tennessee.....	6	49		1			6	50
Texas.....	37	293	5	32			42	325
Utah.....	35	160	2	17			37	177
Vermont.....	1	17					1	17
Virginia.....	4	53		4			4	57
West Virginia.....	4	38		2			4	40
Wisconsin.....	28	369	7	41			35	410
Wyoming.....	9	43				1	9	44
Alaska.....	2	21		11			2	32
Argentina.....		3						3
Australia.....		5						5
Austria.....		1						1
Brazil.....		1						1
Canada.....	310	1,192	26	108		5	336	1,305
Canal Zone.....		1						1
China.....		12		1				13
Cuba.....		3						3
Denmark.....				1				1
Dutch East Indies.....		1						1
England.....		25		3				28
France.....		3		4				7

<sup>1</sup> Included in totals for State of Washington.

<sup>2</sup> No cars at Ohanapeesh entrance.

*Distribution of private automobiles entering Mount Rainier National Park, by States, and of total tourist travel from Seattle, Tacoma, and the various States and countries, for the travel year 1924—Continued*

State or country	Nisqually entrance		White River entrance		Carbon River and Ohanape-cosh entrances		Total	
	Cars	People	Cars	People	Cars	People	Cars	People
Germany.....		3						3
Greece.....		1						1
Hawaii.....	14	74	8	17			22	91
Holland.....		2						2
India.....		2						2
Ireland.....		1						1
Japan.....		9		7				16
Mexico.....		3						3
Philippine Islands.....				3				3
Porto Rico.....		2						2
Scotland.....		2						2
South Africa.....		3						3
Spain.....		3						3
Switzerland.....		1						1
Total.....	28, 462	120, 506	9, 046	36, 326	843	4, 641	38, 351	161, 473

<sup>3</sup> Includes motorcycles.

#### Summary

Methods of transportation	Nisqually entrance		White River entrance		Carbon River entrance		Ohanape-cosh entrance	Total	
	Cars	People	Cars	People	Cars	People	People	Cars	People
Private autos.....	28, 129	109, 663	9, 024	36, 301	842	3, 015		37, 995	148, 979
Ashford stage.....	391	3, 488						391	3, 488
Seattle and Tacoma stage.....	729	6, 777						729	6, 777
Motor cycles.....	333	501	22	25	1	1		356	527
Horse-drawn vehicle.....		2				9			11
Horseback.....		1				107	67		175
On foot.....		74				368	1, 074		1, 516
Total.....	29, 562	120, 506	9, 046	36, 326	843	3, 500	1, 141	39, 471	161, 473

Travel from Seattle.....	57, 055
Travel from Tacoma.....	32, 474
Travel from other points in Washington.....	38, 806
Travel from States east of the Mississippi River.....	8, 066
Travel from States west of the Mississippi, exclusive of Washington.....	23, 538
Travel from United States Territorial possessions.....	132
Travel from foreign countries.....	1, 402

Total travel for year..... 161, 473

### CRATER LAKE NATIONAL PARK, OREG.

#### GENERAL STATEMENT

Crater Lake National Park was created by congressional act approved May 22, 1902 (32 Stat. 202). It comprises an area of 249 square miles, situated in southern Oregon on the crest of the Cascade Mountains. The altitude range is from 4,250 to 8,938 feet. There are some private timber holdings along the southeastern border.

#### ADMINISTRATION

The park executive is the superintendent, assisted throughout the year by one clerk and one permanent ranger. Nine temporary rangers and about 40 men are added during the season. The superintendent directs all park activities except the post office and the judicial function, which rests with United States commissioner, Mr. W. G. Steel.

#### PUBLIC UTILITIES

The Crater National Park Co. operates the Lodge (hotel), a small store at the Lodge, a store at Anna Spring, an automobile stage service, and a launch and boat service on the lake. Physical improvements made this year by the company include the completion, exteriorly, of the addition to the Lodge destined to add 85 rooms to the original

61-room structure; the completion and furnishing of 22 of these new rooms; a new 40-passenger launch; and a boathouse on Wizard Island.

The Kiser studio, holding a photographic franchise, added a small wing to provide a developing and printing service.

The Standard Oil Co. excellently operated the service station at Anna Spring.

#### GENERAL CONDITIONS

The season was marked by unusually early snow recession. With little labor expenditure the loop through Anna Spring opened on May 16 and to the Rim on May 27. The Rim Road was opened on June 23, over 4 weeks earlier than any previous record. This early drying of the roads and of the forest floor rendered road maintenance difficult and the fire hazard critical; especially as relief in the form of precipitation came only twice during the summer. Flowers bloomed brilliantly almost immediately after snow recession, but withered early; the grasses and other low vegetation faded quickly. Streams were reduced in volume early and some hitherto unfailing springs dried up, Cold Spring, Anderson Spring, and others failing for the first time in their known history.

Except for the very dusty roads and for a somewhat desiccated appearance of the park in general, it was an ideal season for visitors, particularly campers, who enjoyed the almost uninterrupted succession of cool sunny days and starlit nights.

#### APPROACH ROADS

The year saw the completion of the Mile-high Highway between Klamath Falls and a point 6 miles below Ashland on the Pacific Highway. This fine macadam highway, together with the equally well maintained highway between Klamath Falls and our south entrance, was used by a greatly increased proportion of Park visitors.

The McLeod Cascade Gorge section of the Crater Lake Highway out of Medford to our west entrance was completed this year. This road is now completely widened and is surfaced except for the 6-mile stretch between Silver Camp and our west entrance.

The Dallas-California Highway is completed from Klamath Falls to a point beyond intersection with the 4-mile spur connecting with our east road; northward toward Bend, however, it was bad going.

The dirt road between Diamond Lake and our north boundary was well maintained.

#### ROADS WITHIN THE PARK

Road maintenance was especially difficult this year, the contributing factors being the early and long season, great increase in travel, lack of precipitation, and inadequate funds and equipment. By utilizing every resource the 57-mile road system within the park was maintained as something better than passable, but it is sadly apparent that our present road surfaces will not withstand the battering of over 200 cars a day.

#### TRAILS

All park trails were sufficiently maintained all season, effort being distributed in accordance with comparative use. A new trail was constructed from White Horse Bridge to the Nutcracker; a short trail made from Government Camp to the Lady of the Woods. Only four of our trails are much traveled.

#### TELEPHONE SYSTEM

Telephone service was more satisfactory than last year. Four high-power instruments were installed advantageously. A parallel line was constructed between Anna Spring and Government Camp, making two simultaneous conversations possible. The entire system, except the Wineglass and Backbone lines, was restrung and renovated. Long-distance service is not satisfactory.

#### NEW CONSTRUCTION

A wing was added to the log cabin at Government Camp, the remodeled structure now adequately providing a general office, a superintendent's office, and an information bureau.

A community house was constructed at the Rim auto camp. It is of appropriate design, fills a definite need, and is much appreciated by thousands of campers.

#### MISCELLANEOUS WORK

Major effort has been directed toward road maintenance, but a considerable amount of miscellaneous work has also been accomplished, including the roofing with shakes of the west and east entrance cabins and the Anna Spring bunk house; reconstruction in whole or in part of four bridges; construction of two new latrines near the boat landing; construction of a new powder house; erection of an appropriate log boundary arch; shingling of tank house; installation of small generating sets at Government Camp and the Rim; improvement of water-heating devices at the Rim comfort station; painting or staining of several structures; erection of new park signs; repair of buildings; and a general overhauling of trucks, pumping, and miscellaneous equipment.

#### PARK MENACES

Crater Lake did not entirely escape harm from the forest-fire hazard general throughout the West. An electrical storm started several fires, the worst, that on the west slope of Sun Creek Canyon, covering about 700 acres. Later, on the west slope of Timber Crater (one of the 9 started simultaneously by another thunder storm) another fire burned about 400 acres. A score of other fires were started by storms, but all were controlled before harm was done.

There were no serious fires of camp-fire origin, thanks to the loyal assistance of campers.



## TRAVEL IN 1924

Weather conditions, together with increased publicity, resulted in the heaviest increase in travel yet recorded. The western gate led, but the southern gate showed a greater percentage of increase. The Loop trip through the park was much more popular than last year. Travel to and from Diamond Lake increased considerably. Because of the poor condition of certain sections of the road south of Bend the east entrance was comparatively unimportant as a gateway. The outstanding feature of the season was the heavy travel from California.

## Total season travel by entrances, 1924 and 1923

Gateway	By automobile		By motorcycles		By stage	Other means	Total visitors
	Cars	Visitors	Cars	Visitors			
1924							
East.....	676	2, 246				4	2, 250
South.....	6, 720	22, 303	12	20	224	313	22, 860
West.....	10, 867	35, 179	18	34	537	203	35, 953
North.....	52	201				4	205
Anna Spring.....	986	3, 020			13	11	3, 044
Total.....	19, 301	62, 949	30	54	774	535	64, 312
1923							
East.....	1, 114	3, 729	2	3		30	3, 762
South.....	4, 761	15, 700	24	33	255	329	16, 317
West.....	9, 363	30, 363	38	53	751	297	31, 464
North.....	139	472	1	2			474
Total.....	15, 377	50, 264	65	91	1, 006	656	52, 017

## Revenues

	1924, fiscal year	1923, fiscal year
Sale of automobile and motorcycle permits.....	\$35,703.50	\$17,997.50
Collected from concessionaires.....	<sup>1</sup> 244.68	<sup>1</sup> 150.85
Total revenues.....	35,948.18	18,148.35

<sup>1</sup> Receipts from studio concession only.

## Appropriations

Act	Fiscal year	Purpose	Amount
January, 1923.....	1924.....	Administration, maintenance, and protection.....	\$35,000
June, 1924.....	1925.....	do.....	30,700

As will be noted from the above statements of revenues and appropriations, Crater Lake National Park is being operated at a profit to the Government, revenues for the 1924 fiscal year exceeding our 1925 appropriation by \$5,248.18.

## FISHING

Fishermen reported unusually good catches in the Lake, especially the silversides planted two years ago, which appear to thrive better than the rainbow trout. Stream fishing was less satisfactory, although experts made good catches of Dolly Varden in Anna Creek. Twenty-five thousand rainbow fingerlings were planted in the Lake through the courtesy of the Klamath Hatchery and the State Game Commission.

## WILD LIFE ABUNDANT

The late fall, mild winter, and early spring were beneficial to wild life. Ten bear, including four new cubs, were almost daily visitors at Government Camp, to the great enjoyment of thousands of visitors. Deer were in almost daily evidence along the roads; fawns were especially numerous. The imported band of elk that ranges near our southern border is reported as having increased to nine. Predatory animals were little in evidence. The smaller wild life was very abundant, especially marmots. Bird life seems to have increased considerably over last year.

## CAMP-FIRE STUNTS

An innovation this year was the organizing as often as possible of impromptu entertainments in the camp grounds. Campers were encouraged to gather about a central camp fire where, stimulated by singers and entertainers recruited from men and women employed within the park, they enjoyed and participated in informal entertainment. The completion of the community house in mid-season permitted dancing, lectures, and other appropriate diversions; pleasant evenings appreciated by thousands of Americans from all over the country. It was a pleasure to us, too, to see visitors gather thus about the fireplace, where strangers became as old friends in the swift alchemy of park spirit.

## GIFTS

We are indebted to the Medford Chamber of Commerce for the purchase of 5,000 park folders; to Mr. Fred Kiser, who has loaned a fine collection of park pictures to our winter headquarters; to the Craters Club of Medford for the gift of a phonograph and records for the community house; and to the California-Oregon Power Company for two highly appropriate pictures.

## RECOMMENDATIONS

- (1) The great fundamental need in this park is improved roads. Travel is so heavy that they can no longer be satisfactorily maintained, so surfacing becomes imperative.
- (2) It is urgently recommended that remedial measures be taken against further forest losses due to insect infestation.
- (3) Our bears constitute a major attraction. It is recommended that the Oregon Legislature be urged to establish an appropriate bear preserve surrounding the park.
- (4) In view of the fact that Crater Lake returns a profit to the Government, it is urged that larger appropriations be made available, as increases are needed in every branch of park endeavor.
- (5) That mechanical equipment be furnished to replace present laborious and expensive hand methods of clearing the roads of snow.
- (6) Long-distance telephone service is unsatisfactory. A direct line to Medford would relieve this situation.
- (7) That funds be made available to eliminate the litter of felled trees that border our woods.
- (8) That a nature-guide service be provided for this park.

## PLATT NATIONAL PARK

ROBERT G. MORRIS, Superintendent, Sulphur, Oklahoma

## GENERAL STATEMENT

Platt National Park was created by acts of Congress July 1, 1902, and April 21, 1904, and contains an area of 848.31 acres of land lying just south of the city of Sulphur, Okla. Platt National Park was formerly called Sulphur Springs Reservation, but was changed to Platt National Park during the administration of McKinley and Roosevelt in honor of the late Hon. Cyril H. Platt, United States Senator from Connecticut, in recognition of his great services to the Indians and to the country. This park was set aside for the people of the United States because of the many medicinal springs found here which have been known and used for their medicinal properties as far back as we have any record of them.

## SPRINGS

The principal springs are the Bromide, Medicine, and Sodium Chloride Springs in the western part of the park; the Black Sulphur, Bromide Sulphur, Pavilion, and Hillside Springs in the central part of the park and the Antelope and Buffalo Springs in the extreme eastern part of the park. The Antelope and Buffalo Springs are nonmineral in character and flow from an elevation of 1,080 feet above sea level. It is estimated that 5,000,000 gallons of water flow from these two springs daily. They are the source of the Travertine Creek, famed for its beauty and purity. The Bromide Spring is by many considered the most wonderful spring, as its waters are found to be a cure for stomach trouble, nervousness, and rheumatism. The Black Sulphur Spring is also fast becoming very popular and thousands of people visit it and drink its waters. They also use the mud in which to take baths and claim many wonderful cures from its use. The water from the Black Sulphur Springs is beneficial in the case of skin diseases, chronic sores, eczema, and other blood diseases.

## VISITORS TO PLATT NATIONAL PARK

During the year past the number of visitors to Platt National Park has steadily increased, and included people from 38 States, Old Mexico, District of Columbia, Canada, and South America. All went away singing the praises of the park. Our opening day was a great success, with thousands of visitors, and the stream of visitors and campers has never stopped since. The following table will show how Platt has steadily increased in the estimation of the people.

Visitors for past six years:

1919	107, 918
1920	173, 310
1921	216, 022
1922	246, 998
1923	470, 840
1924	539, 495

Campers for past six years:

1919	689
1920	2, 981
1921	10, 526
1922	23, 170
1923	74, 589
1924	95, 272

## CAMPER'S

During the year past our camp grounds have been used by thousands of campers. During the summer months we were crowded to capacity and had difficulty keeping campers away from roads and springs where they tried to camp. The camp-supply houses in town were rushed till there was not another tent to be had at times. Campers coming to Platt during the year used 24,658 automobiles and 198 teams.

## ANIMALS

Our animals are a source of much enjoyment. The elk are very fond of being fed and will follow tourists around the fence in the hope of getting eats. The deer also are very tame and will eat from one's hand. This year we have another baby elk, making four elk here now. The squirrels come in for a great amount of attention. They are so tame that they will come and sit on one's lap and take the nuts offered them or climb into pockets hunting for them. The buffalo are the only animals here that are not friendly with the visitors.

## ROADS

The roads in Platt Park were originally made for horse-drawn vehicles and are very narrow. To-day the horse has been replaced by the car, and our roads are not fit for the heavy automobile traffic. They have never been wide enough and have been patched and repatched and are now in very bad condition. I estimate that \$50,000 will be required to make the roads here safe and fit for travel. After leaving rock highways our roads are even more noticeable to tourists and they condemn us before they know the conditions.

## IMPROVEMENTS

The only item of improvement the past year was the remaking of a causeway over Rock Creek. Our entire time has been expended in extending our camp grounds, repairing the roads, and in keeping the park in as good a condition as possible without funds for upkeep and improvement.

## RECOMMENDATIONS

Platt National Park's needs are: Buildings repaired and repainted; pavilion over Black Sulphur Springs; more men to do the work, and more teams, harness, wagons, and equipment; larger camp grounds, more comfort stations, more sewer lines, more water and light; widening, grading, and resurfacing of roads; and an automobile for the use of the superintendent. A Government bathhouse should be established at Platt and other improvements installed to make the park a real health and pleasure resort.

## WIND CAVE NATIONAL PARK

ROY BRAZELL, Superintendent, Hot Springs, S. Dak.

## GENERAL STATEMENT

This park was created by act of Congress January 9, 1903 (32 Stat. 765), and is located in the southern Black Hills in southwestern South Dakota. It is approximately 4 miles square and is about evenly divided between rolling prairie and timbered mountains, the altitude ranging from about 3,500 to 5,000 feet.

## THE CAVE

Our main attraction is Wind Cave, the entrance of which is in the approximate center of the park. When discovered, in 1881, the original opening was but 8 or 10 inches in diameter, from which a strong current of air was issuing, hence the name "Wind Cave." This "wind" has no regularity as to direction or velocity, and at times is astonishingly strong either going into or issuing from the cave and is a very good barometer, indicating a change in the weather from 4 or 5 hours to a whole day in advance. So far as known there is but this one opening to the cave.

Wind Cave is one of the biggest caves known, having over 100 miles of explored passages, with the end still to be found. It contains practically all of the geological formations of limestone, many of which are very beautiful and some of which are found only in this cave. Some of the chambers are very large, covering 4 or 5 acres, but as a whole it consists of a series of narrow passages and small rooms. Three routes, called the Garden of Eden, the Fair Grounds, and the Pearly Gates—a short, medium, and long route, respectively—have been opened to the public.

## ADMINISTRATION

Our personnel is, because of lack of funds, incomplete. The park is administered by a superintendent and one permanent ranger. During the busy season a few temporary rangers are employed who act as guides in the cave. It has been impossible to employ a sufficient number of the right type of men to properly show the cave to visitors and to protect the formations therein.

## VISITORS

Despite unfavorable economic conditions all previous records of visitors were eclipsed, the increase for the months of June, July, and August being 26 per cent over last season's record-breaking run. The number of visitors to this park has more than



doubled during the past five years. Of the 52,166 visitors to the park during the year, 51,600 came in 17,200 private cars. Thirteen thousand nine hundred and eleven people made the trip through the cave.

With but three exceptions every State in the Union was represented this season, as well as South America, Cuba, China, England, Denmark, Canada, Scotland, Ireland, Russia, and Hawaii, but the bulk of our visitors came from this and near-by States. More than 96 per cent of our visitors came to the park in private autos, and as a very large proportion of these were carrying camp duffel, our camp sites were inadequate to handle the increased numbers. Rail and autobus travel to the park continues to show a decrease.

#### RAILROADS AND BUS FACILITIES

The park may be reached by rail over the Chicago, Burlington & Quincy and the Chicago & North Western Railroads to Hot Springs, which is but an overnight ride from Omaha, Denver, or Billings. Larson & Dean, operating an autobus line from Hot Springs to the park, have provided new and up-to-date equipment and are giving excellent service.

#### ROADS

The one road extending across the park from north to south has been in abominable condition all season. The failure of the general road budget was a severe blow to this park, as our one most imperative need is a good road. Our meager appropriations have been insufficient for even the proper maintenance of our narrow, rocky, dirt road which is a link in the main highway through the Black Hills, and its condition has elicited a lot of unfavorable comment from visitors who contrast it with the miles of wide, gravel-surfaced roads leading to the park.

#### CONSTRUCTION

It was necessary to build a small ranger cabin to house the additional employees, and to construct additional water-storage facilities. These items were taken care of from our regular budget, though other maintenance features had to be neglected to accomplish this.

#### BIRDS AND ANIMALS

Game birds are increasing and becoming very tame. It is estimated that there are 14 flocks of grouse, 8 coveys of quail, and about 15 ruffed grouse on the park, in addition to the smaller birds.

About 4,000 acres of the park are fenced for a game preserve and contain 130 buffalo, 7 antelope, 2 deer, and approximately 300 elk. Buffalo and elk are in good condition and increasing rapidly.

#### REVENUES

The revenues of the park, from all sources, for the fiscal year 1924 were \$4,015.50.

#### RECOMMENDATIONS

1. The administration, protection, and maintenance appropriation should be increased so that at least two more men could be employed permanently for clerical and general utility duties, and also to provide funds for maintenance features that we have been forced to neglect.
2. In addition to a proper maintenance fund, a most imperative need of this park is a good road comparable to those leading to the park.
3. The present system of lighting the cave, viz, candles and lanterns, is far from satisfactory, and an adequate electric-lighting system should be installed at the earliest practicable date.
4. The park has outgrown its water system, even with the additional storage capacity provided last year, and the present supply should be augmented by the construction of a big dam on the creek about 3 miles from headquarters.
5. An administration building, combined machine shed and workshop, ice house, and a shelter for camping visitors are needed and should be provided in the near future.
6. A good draft team, harness and wagon should be purchased; also an automobile and some much-needed road machinery and tools, and some additional office equipment should be provided.

#### SULLYS HILL NATIONAL PARK

W. R. BEYER, Acting Superintendent, Fort Totten, N. Dak.

The summer season in Sullys Hill National Park was quite cool, with considerable rain during the early part of summer. The rains were responsible for putting the poor roads in bad shape, and this fact, together with the cool weather, made a reduction in the number of visitors at the park.

The following improvements have been made: New entrance drive graded and surfaced; new entrance piers completed and stone tablets inserted in piers; walk around Sweet Water Lake made and half graveled; four more lunch tables and two fireplaces installed; parking grounds marked off with large stones; barbed wire placed on picnic ground fence; corral built for stacking hay and capturing elk and buffalo; Hostess House furnished and all buildings painted; water piped into lower picnic grounds; nesting boxes for tree ducks and song birds put in trees; and many other improvements.

*Mammals and game birds in preserve*

Kind	Number in 1923	Increase	Loss	Total number now on preserve
Buffalo.....	13	2	1	14
Elk.....	25	30	2	55
Deer.....	<sup>2</sup> 1	0	( <sup>3</sup> )	<sup>2</sup> 1
Pheasants in captivity.....	7	5	0	12
Ducks, wood ducks, 6; Golden eyes, 6; mallards and other ducks, 30.....	13	31	0	44
Canada geese.....	1	<sup>4</sup> 5	0	6

<sup>1</sup> Calf.<sup>2</sup> By count.<sup>3</sup> Not known.<sup>4</sup> Purchase.

The 14 buffalo at this preserve are doing very well. The Minot City park is getting a fine buffalo bull from Sullys Hill. Two more buffalo bulls will be sold from this preserve for exhibit purposes or meat this fall. One small buffalo calf was lost this spring.

At Sullys Hill there are by count 40 grown elk. It is estimated that there are at least 15 or more elk calves. One old bull and one calf elk were lost during the last year. At least 10 bull elk will be sold for meat this fall.

Preparations are being made for a hard winter, and a good supply of hay is being purchased.

Deer at Sullys Hill are not increasing. The deer started with were of southern stock and have not done well. Only one deer has been counted recently. None have been found lost. Plans are made to secure a new start of northern white-tail deer in the future.

The pheasant is doing well in this locality. I should judge there are at least 300 pheasants in the vicinity of Sullys Hill. In captivity there are 7 old birds and 5 young ones. Plans are now made to build more extensive bird inclosures.

The wild mallard and Canada geese are at home on Sweet Water Lake. The geese and ducks come to the shore for feed from the visitors. Many geese are beginning to stop, when the flights are on, at Sweet Water Lake. A start of wood ducks and golden-eyes has been secured. Wild wood ducks and golden-eyes are coming into Sweet Water Lake for feed and protection.

Visiting tourists up to September 30, 1924, were counted as follows:

October 1 to May 31.....	591	September.....	535
June.....	1,148		
July.....	2,749	Total.....	8,035
August.....	3,012		

Sullys Hill National Park is popular with both tourists and local visitors. The most important need at present is a good road leading to the park, as the present approach roads are exceedingly poor; they are hard on autos and discourage visitors from making another trip over the same road. It is hoped by the time another annual report is due that Federal-Aid Highway No. 249, leading to this park, will be completed.

## MESA VERDE NATIONAL PARK

JESSE L. NUSBAUM, Superintendent, Mancos, Colo.

## GENERAL STATEMENT

Mesa Verde National Park, as created by act of Congress approved June 29, 1906 (34 Stat., 616), embraced an area of 66.2 square miles. By act of Congress approved June 30, 1913, the boundaries of the park were so changed as to include an aggregate area of 76.51 square miles or 49,966.4 acres. The park is situated in the extreme southwestern part of Colorado in Montezuma County.

## ADMINISTRATION

The park is administered by a superintendent, with permanent headquarters within the park, who is assisted by a very limited number of rangers, mostly temporary, who conduct visitors to and through the ruins, care for permits, regulate traffic, patrol the park area, and protect the game. The clerk-disbursing officer was moved to the new administration building at park headquarters from the Mancos office for the park season, but must return to the rail, mail, and telegraph headquarters of Mancos for the winter before the roads are blocked with snow, and contact with him will be by park telephone as in the past. Only in this way can I personally carry on and direct the winter work here and keep in close contact with the Washington office. The establishment of a summer post office here made possible the moving of the clerk to the park for the summer.

## TRAVEL

Mesa Verde can never hope to compete with other national parks in volume of travel because of its comparative isolation. It is located over 175 miles from the nearest broad-gauge standard Pullman railroad, equally distant from the nearest great east-and-west transcontinental highway, and separated by nearly 400 miles of the very backbone of the Rocky Mountains from the great tourist centers about Denver. Rail service to within 26 miles of the park is by the D. & R. G. Southern, a narrow-gauge non-Pullman line, which entails an overnight stop en route in reaching Mancos.



Approach roads to the park over the high mountain passes are closed till a month after the park season opens, and closed again previous to the closing of the season.

Notwithstanding the fact that automobile stage service is maintained during the season from the Santa Fe main line at Gallup and from the D. & R. G. S. line at Mancos, less than one-half of 1 per cent of all visitors are rail passengers. Over 90 per cent of the total travel is by privately owned automobiles.

The wonderful scenic State highways of Colorado over the great mountain passes and particularly the Durango-Silverton-Ouray Road, have been a great asset in bringing visitors to this park. The improvement about to be started on the Gallup-Shiprock Road, the southern entrance road to the park, will make it possible to intercept the heavy travel over the National Old Trails Highway, at Gallup. The interest in Mesa Verde is more than nation-wide, as visitors have registered from six foreign countries this season. Individual registration shows representatives from every State in the Union, and private automobiles bearing State license plates from nearly every State in the Union have been recorded this season.

*Visitors entering Mesa Verde National Park, season 1924*

Transportation company's cars	300	Hiking	93
Private cars	6,119	Motor cycles	4
Second trips	273	Miscellaneous travel	87
Wagon	55		
Horseback	178	Total	7,109

*Private cars and passengers, by States, season of 1924*

State	Number of cars	Number of visitors	State	Number of cars	Number of visitors
Alabama	1	2	Nevada	3	7
Arizona	47	127	New Jersey	3	9
Arkansas	1	2	New Mexico	95	336
California	107	315	New York	14	47
Colorado	1,089	3,786	North Dakota	5	11
Connecticut	3	6	Ohio	17	48
District of Columbia	3	10	Oklahoma	48	162
Florida	2	5	Oregon	5	16
Idaho	5	18	Pennsylvania	10	38
Illinois	20	64	Rhode Island	1	2
Indiana	6	17	South Dakota	3	6
Iowa	11	50	Tennessee	1	4
Kansas	39	137	Texas	71	258
Kentucky	1	4	Utah	53	176
Louisiana	2	4	Vermont	1	2
Maryland	2	7	Virginia	1	2
Massachusetts	5	16	Washington	13	38
Michigan	13	41	West Virginia	3	10
Minnesota	6	18	Wisconsin	6	13
Missouri	40	135	Wyoming	17	63
Mississippi	1	4			
Montana	2	9			
Nebraska	27	94	Total	1,803	6,119

SERVICE TO THE PUBLIC

All park operators have been rendering excellent service to the public during the present season. But for the relocation, rearrangement, and enlargement of the Spruce Tree Camp Hotel last season and the additional cottages and tents erected this season, this operator could not have cared for the 50 per cent increase in visitors this season. The Mesa Verde Park & Saddle Co. made expenses this season and in another year will have a fair return on its investment. The Gallup-Mesa Verde stage line, connecting with the Santa Fe System main line at Gallup, 178 miles south, can not expect a large business until the improvement of the Gallup-Shiprock Road across the Navajo Reservation is accomplished. The Mesa Verde Transportation Co., operating an automobile stage line from Mancos to the park, although rendering excellent service, had fewer passengers than during last season. This company has the mail contract for the park during the present season.

ADMINISTRATIVE HEADQUARTERS

Administrative headquarters were again maintained at Spruce Tree Camp during the past year, and the lone clerk in the park office in Mancos was moved to the new administration building in the park as soon as the summer post office of Mesa Verde National Park, Colo., was established.

Plans and sketches prepared by Mrs. Nusbaum were submitted and approved, covering the construction of the clerk's quarters, public comfort station, and the ranger station. Two of the buildings have been completed and placed in use. The ranger station will be started as soon as water is available for construction. All these buildings follow the Pueblo Indian type of architecture adopted for use in the administrative group in this park and will be furnished in conformity with the superintendent's home, which has received so much favorable comment. The industrial plot was cleared and the shop building and warehouse erected thereon early this spring. The employees' mess hall and employees' dormitory will be completed late this fall. Slowly but surely the administrative group is taking form along the prearranged and approved plan, and with



comfortable housing facilities for employees, which have never been provided before. Mesa Verde will be prepared for an even more efficient and economical period of administration.

#### MUSEUM

Interest in the archeological collections of the Mesa Verde has been greatly accentuated by the appointment of a museum assistant who is constantly on duty in the museum and gives informative talks on the collections therein. The museum is still located in the old inflammable log cabin, as water has not been available since before June 1 to complete the new museum, and this work will have to be accomplished this fall and winter. Much new material has been added to our collection during the past season.

#### PUBLIC CAMP GROUNDS

Over 55 per cent of the total number of visitors during the season made their home on the public camp grounds during their stay in the park. Due to extreme drought the grounds have been somewhat dusty this season. Water is piped to convenient outlets thereon, firewood is supplied and toilet facilities provided for campers.

#### TELEPHONE SYSTEM

Much work has been necessary on the telephone system this season to keep it functioning regularly, and until the park constructs its own line from Mancos to the park boundary, the maintenance of that section where our lines are attached to the local toll line will not be satisfactory.

#### LIGHT PLANT

A new 1½ kilowatt 110-volt storage-battery type light plant has been installed to replace the small worn-out plant used heretofore.

#### ARCHEOLOGICAL WORK

No excavation work in the ruins was contemplated during the season, funds being available only for the repair, preservation, and protection of ruins previously excavated.

#### WATER SITUATION DESPERATE

Once again this season, as in the past three seasons, the lack of an adequate water supply has all but closed this park. Heroic work on the part of the park forces, and the realization of the desperate situation by visitors and operators, alone made it possible to keep the park open during the season.

The situation is extremely desperate and acute. Many nights during August there was less than 2 gallons of water available per visitor and employee for the following 24-hour period. Stock was watered as far as 8 miles from camp, the hotel bathhouse closed in early June, construction work entailing use of water stopped July 1 and water for laundry purposes was not available for protracted periods after June 30. Large signs were placed at each public outlet, personal appeals signed by me were posted over the camp, and during very critical periods, I personally appealed to visitors at the evening camp fire to help us keep the park open by using water most sparingly. Dams constructed this season increase the flood waters impounded by tenfold. The upper cistern now holds seven times the volume of water. A new pumping plant has been installed to replace the worn-out one.

Appropriations for water development have not been sufficient to keep ahead of the increase in attendance, and sufficient water for the conservative uses of visitors and park employees must be developed if Mesa Verde is to continue as a national park. August visitors alone amounted to over 50 per cent of the total registration during the past season, and each year the percentage of increase grows.

#### CAMP-FIRE TALKS, VOCAL CONCERTS, AND INDIAN DANCES

Camp-fire talks by park officers on the archeology, history, geology, flora, and fauna of the park are conducted regularly each favorable evening during the major part of the season for the enlightenment of all visitors. Noted scientists, educators, travelers, etc., often add to the success of the evening. Occasionally noted singers delight our visitors with impromptu concerts given from Spruce Tree House ruins, the cave acting as a great amplifying sound board which makes even the softest notes audible in camp. Six of the best dancers and singers of the Navajo Indians employed in camp conclude the evening's entertainment with several parts of the famous "Yeibachai Ceremony."

#### "THE EAGLE WOMAN"

Both in the mythology of the Navajo, as well as that of the Zuni Pueblo Indians, the "Eagle Woman" is a most important and sacred character. Mrs. Nusbaum wrote a ceremonial play based on this mythology, designed for enactment in the ruins of Spruce Tree House, across the canyon from headquarters. After gaining the confidence of the leading Navajos and a medicine man employed here she gradually unfolded her plans to them, and they agreed to enact the various parts of the drama, including the songs and dances in costume within the ruins which normally they will not even enter. Costumes were designed and executed and 18 Indians trained for their various parts. The cave and various parts of the ruins were lighted by red and green railroad flares, which were set and shielded to produce the striking lighting effects. The ceremonial drama was given twice during the season before large crowds seated on the opposite rim of Spruce Tree Canyon.

#### FLOWERS

Mesa Verde was a vast garden of flowers and blooming shrubbery above the timbered area previous to the period of protracted drought and abnormally warm weather. Lack of moisture literally killed this wonderful display.

## WILD ANIMALS

Again, because of drought, water is not available for the park deer, and they are feeding well down in the timber on the north slope and watering in the valley. Several groups were seen in the early spring and occasionally single bucks since that time. One only of the three big mountain lions, known to be killing deer on the park, was treed by dogs and shot down. Coyotes are abundant, bobcats numerous, and kit fox and swifts and porcupines are often seen.

## CONSTRUCTION OF TRAILS

The construction of the Rock Springs Trail, stopped last season because of excessive rains, was completed early this season. This trail opens to the visitors dozens of hitherto practically unknown ruins on the west side of the park, one of which, Long House, is second only in size to the famous Cliff Palace regularly visited by park guests. None of the ruins on this trail have been excavated and repaired.

A short foot trail was constructed from Square Tower House to the unexcavated ruins of Little Long House, and another from Cedar Tree Tower road to a series of approximately 100 prehistoric dams found during the past season. A third trail was roughed out to the elaborate pictographs on a point now called "Pictograph Point." All trails have been maintained in excellent shape, and the damage to the Rock Springs Trail by reason of the cloudburst of August 3 was immediately repaired.

## ROADS

The damage to roads, particularly the Knife Edge section, by cloudbursts of the previous season, which was ended by a final deluge late in December, was barely repaired this season when we were confronted by an equally serious problem by reason of protracted drought, which started the loose and disintegrated shale to sluffing and sliding under the Knife Edge Road. Heavy dry desert winds and lack of binding moisture started an extensive movement which increased gradually in intensity until at one time one 1,100-foot section of the road, nearly 1,800 feet directly above the valley, was reduced to less than 9 feet in travel width, even after the ditch line was filled. Cribbs of 60-foot logs, and hundreds of loads of scrub-oak brush in the leaf were necessary to stop this movement. Seventy-five per cent of the total fund for the maintenance of all roads for the year was expended in checking the movement and widening the road for safe passage of park visitors, nearly all of which could have been saved by one good soaking rain at the opportune time.

Mesa Verde has excellent dry weather roads, as far as surface is concerned, as they are composed of admixtures of clay, red soil, soft disintegrated shale and gumbo. Wet, they are very treacherous, and during long soaking rains become utterly impassable. Grades up to 20 per cent still obtain, the switchbacks and hairpin turns need correction, and the whole road demands widening and hard-surfacing to withstand the traffic imposed, and which during the present season has been over 42 per cent greater than last season. Park roads must be improved to compare favorably with approach roads, which during the coming season will be hard-surfaced past the park entrance. The time for improvement is now.

## RUINS AND NEW DISCOVERIES

The number of ruins accessible by trail within the park has been more than doubled by the construction of the Rock Spring Trail. Due to excessive rains of the past season, much damage was done to exposed ruins on the mesa tops, and to exposed walls under the caves and the cliffs. All ruins are maintained in the best possible condition with the limited funds available, but the increasing thousands who visit them yearly proportionally increase the cost of preservation.

A fine series of pictographs has been found on a spur of Navajo Canyon, not far from camp, and the point has been named Pictograph Point. A beautifully preserved watch tower, 25 feet high, was located last winter on the west side of the park, and in Step House Cave remains were found of the very early post basket maker culture.

## GIFTS

The new museum building, I regret to say, has not been completed, because of the water shortage, but conditions may so improve as to make the completion possible this fall. Mrs. Leviston has very generously added \$2,000 to her previous gift of \$3,000 for the park museum.

Mr. Alvah Davidson, of Brooklyn, N. Y., is having a fine relief map made of the park area as his gift to the new park museum.

Numerous friends of the Mesa Verde National Park, whose names I am not at liberty to mention, have most generously and voluntarily pledged and contributed to one or another of the various park activities, for which the Government makes no provision, sums ranging from \$1 to \$3,500, and the total of all amounts pledged and contributed this season approximate \$7,000.

## BROOKLYN DAILY EAGLE NATIONAL PARK DEVELOPMENT TOUR

Secretary Work, of the Interior Department, in a letter to H. V. Kaltenborn, leader of the annual tour, suggested that the national parks should again be visited this year, and called particular attention to the Mesa Verde National Park. I followed up his letter with a personal invitation to visit this area and outlined additional scenic and other features which they might well include in their tour. Communities for 200 miles to the east, 100 miles to the north, and 200 miles to the south united with the park in making their tour a most successful and never-to-be-forgotten one. This party dedicated the Knife Edge Road in the park, and later at Shiprock, N. Mex., the southern entrance road to the park. Never has a national park been host to a finer, more intelligent, and more congenial group of visitors than that of the Brooklyn Daily Eagle party under the leadership of Mr. Kaltenborn.



## PERMITS AND LEASES

One restricted cattle-grazing permit was issued on lands remote from the roads and ruins. Permits were also issued to the Mesa Verde Pack & Saddle Co. for pack and saddle animal transportation and to Morris and Evans for the operation of passenger-stage line from Gallup, N. Mex., to the park and return.

## RECOMMENDATIONS

Mesa Verde is becoming well and favorably known throughout the length and breadth of the land, and again for the second time in the past three seasons it will undoubtedly lead all national parks in percentage of increase of travel over that of the previous season. Our most imperative needs are first and foremost:

1. Sufficient water to care for the conservative needs of visitors, operators, park employees, and park construction.
2. Wider and hard-surfaced roads, reduction of grades of 10 to 20 per cent to a maximum of 8 per cent, and correction of hairpin turns and excessively quick switchbacks.
3. Increased appropriations so that Mesa Verde can meet the requirements that a 50 per cent growth in attendance in a single season demands.

## GLACIER NATIONAL PARK

CHARLES J. KRAEBEL, Superintendent, Belton, Mont.

## GENERAL STATEMENT

Glacier National Park, comprising 1,534 square miles of the State of Montana, is bordered on all sides by great public land areas. Northward is Waterton Lakes National Park of Canada, eastward the Blackfeet Indian Reservation, southward the Flathead National Forest, and westward the Blackfeet National Forest. Its claim for national park status is its inclusion of the most rugged and scenic portion of the Rocky Mountains, containing more than 60 glaciers and over 200 lakes, the waters of which drain to the Arctic, Atlantic, and Pacific Oceans.

During the past year there has been added to the park a total of 746.73 acres as a result of two land exchanges by special act of Congress approved March 3, 1917 (39 Stat. 1122). These exchanges were consummated by giving timber only in exchange for lands and timber. The standing timber on the total of 1,488 acres, which was given in exchange, lies in the southwest corner of the park in an area never visited by travelers and entirely out of sight of all traffic. There still remains within the exterior boundaries of Glacier Park 15,761.28 acres of privately owned lands.

## ADMINISTRATION

The park is administered by a superintendent, 2 assistant superintendents, 1 of whom is also chief ranger, a clerical force of 4 permanent and 3 temporary employees, and the ranger force consisting of 13 permanent rangers, 12 temporary rangers, 1 assistant chief ranger, and 2 first assistant chief rangers. The addition of four rangers to our staff during the past year, has greatly increased the efficiency of our field force.

During December, 1923, former superintendent J. Ross Eakin was transferred to Grand Canyon National Park in Arizona, and Charles J. Kraebel took over the superintendency of Glacier in February, 1924.

## TOURIST ACCOMMODATIONS AND FACILITIES

For the accommodation of travelers there are a number of excellent hotels and chalets. Those on the east side of the park are operated by the Glacier Park Hotel Co. and include two large hotels—Glacier Park Hotel at Glacier Park Station, accommodating 400 guests, and Many Glaciers Hotel at Lake McDermott, 55 miles from the railroad, accommodating 500 guests. The chalet groups are located at points of vantage accessible for the most part one from the other, in a day by horseback or hiking. Glacier Hotel with its numerous cottages accommodating 400 guests, situated on Lake McDonald on the west side of the park, is operated by Mr. John E. Lewis. At the head of Lake McDonald is Park Cabin Resort (Geduhns) and at the foot is Appar, at both of which there are a number of cottages for travelers' use. At the foot of the lake, Lake McDonald Camp (Gold Bros.) has increased its accommodations by the erection of six attractive cottages. Skyland Camps at Bowman Lake is also a popular tourist center.

## TRANSPORTATION

Visitors arriving by rail are distributed by motor busses and touring cars operated by the Glacier Park Transportation Co. All of the larger lakes are traversed by launches operated by the hotel company or by individual concessioners. The Park Saddle-Horse Co. maintained over 800 saddle horses and gave the public the best saddle-horse service that has ever been given. A notable achievement was the movement, without the slightest difficulty, of a hiking party of 210 members of the Sierra Club of California, on a three weeks camping trip through the park. The transportation company greatly increased its facilities this year and were prepared to handle a far greater travel than the season developed.

## NATURE GUIDE SERVICE

Our nature-guide service was most efficiently maintained again this year by Dr. M. J. Elrod of the University of Montana. Although greatly handicapped by lack of a Government building to accommodate his work, Doctor Elrod was furnished space in the lobby of Many Glaciers Hotel and his displays and talks filled a very distinct need of thousands of visitors. Besides maintaining a considerable display of flowers, Doctor Elrod prepared an excellent exposition of the geological history of the park, which



aroused great interest. He made many field trips and constantly supplied our office with publicity matter for the press. His most notable achievement during the past year has been the publication of a complete guide to Glacier National Park, fulfilling a most urgent demand on the part of the traveling public.

## TRAVEL

An early spring stimulated an increase of travel to the park, particularly through the western entrances, this being entirely motor travel. Although a great increase in total registration for the season was anticipated, this hope was not fulfilled because of peculiar conditions throughout the Eastern States. Cool weather and a temporary financial depression caused a pronounced falling off of rail travel, which continued throughout the season. A significant feature has been the steady increase of automobile travel, in spite of adverse conditions. This year we had over 1,100 more automobiles than last year. With so great an increase in one year of poor travel there will undoubtedly result a vastly greater increase in a favorable year, thus placing a severe strain upon our automobile camp ground accommodations. There is no doubt that the completion of the Transmountain Road will result in a tremendous increase of motor visitors to Glacier National Park. The following table shows the kind and amount of travel to the park during the past year:

*Travel by entrances*

Entrance	Private auto-mobile		Private motor-cycle		Saddle-horse, team, and foot	Stages	Boats	Totals
	Cars	People	Cars	People				
Belton.....	2,792	9,155	-----	-----	70	2,188	-----	11,413
Polebridge.....	411	1,153	-----	-----	20	36	-----	1,209
Glacier Park.....	-----	-----	-----	-----	152	-----	-----	152
Waterton Lake.....	-----	-----	-----	-----	3	-----	749	752
Belly River.....	-----	-----	-----	-----	125	-----	-----	125
St. Mary.....	1,252	3,727	2	3	170	7,346	-----	11,246
Two Medicine.....	986	3,408	-----	-----	286	-----	-----	3,694
Sherburne.....	276	872	-----	-----	34	-----	-----	906
Total season.....	5,717	18,315	2	3	860	9,570	749	29,497
Pre-season.....	845	3,000	-----	-----	-----	-----	-----	3,000
Post-season.....	194	775	-----	-----	-----	100	-----	875
Total year's travel.....	6,756	22,090	2	3	860	9,670	749	33,372

Visitors past year (Oct. 1, 1923, to Sept. 30, 1924)..... 33,372  
 Visitors previous year (Oct. 1, 1922, to Sept. 30, 1923)..... 33,988

Decrease this year..... 616

Automobiles past year..... 6,756  
 Automobiles previous year..... 5,599

Increase..... 1,157

Visitors by automobile past year..... 22,090  
 Visitors by automobile previous year..... 16,236

Increase..... 5,854

The automobiles traveling through Glacier National Park this year came from every State in the Union—except Alabama, Georgia, New Mexico, and North Carolina—and from Hawaii, Canada, Mexico, China, Japan, and Denmark.

## ACCIDENTS

This has been a tragic year for Glacier Park. On July 5 a young boy, son of an employee at Going-to-the-Sun Chalets, was drowned in St. Mary Lake at that point; on June 30 a young woman employee at Many Glaciers Hotel died from injuries sustained in a fall on Mt. Altyn. August 24 two young men, brothers, disappeared while hiking from Granite Park Chalet to Glacier Hotel on Lake McDonald. Although a thorough search was conducted for more than a month by a large crew of expert mountaineers, our rangers, and hunters with trained dogs no trace has been found of these men and no theory regarding their disappearance can be advanced.

## REVENUES

The revenues collected and transmitted to the service during the fiscal year ended June 30, 1924, together with the principal sources, are as follows:

Motor-vehicle permits.....	\$6,621.01
Transportation franchises, hotels, residences, etc.....	13,086.41
Grazing and hay-cutting permits.....	125.00
Timber sales.....	73.90
Telephone rentals.....	301.26
Miscellaneous.....	6.00
Total revenues.....	20,213.58

## WEATHER

The total precipitation for the year, October 1, 1923, to September 30, 1924, was 30.26 inches. With the exception of a severe rain and snow storm on June 6 the entire season has been a succession of delightful summer weather with occasional storms.

## ROADS

The most important feature in the park with respect to roads is the construction of the Transmountain Road over the Continental Divide through Logan Pass. On the west side this road was completed to Avalanche Creek, a distance of 4½ miles from its former terminus. The road from the foot of Lake McDonald to Avalanche Creek was placed in excellent condition before June 1, but the storm of June 6 caused many slides and washouts, which required costly emergency measures.

The St. Mary link of the Transmountain Road, extending from St. Mary Chalet to the "Golden Stairs," a distance of 7 miles, was under construction during the year.

On July 30 contract was let for an extension of the Transmountain Road from Avalanche Creek eastward.

It is extremely gratifying to record that a large survey party under the direction of Mr. F. A. Kittredge, of the Bureau of Public Roads, was established in camp at Logan Pass in mid-September to make a complete survey of the entire Transmountain Road.

Due largely to the services of an excellent road foreman the west side road system was maintained at a higher standard than ever before in the history of Glacier Park. Through the aid of the Flathead County commissioners we were given the use of two trucks for North Fork road repairs, and a fund of \$300 was set aside by them for much needed repairs to bridges and corduroys on this road.

We were also fortunate in securing for our east-side roads a foreman whose engineering training made possible the accomplishment of much good work.

The Two Medicine Road, as in former years, has been a source of great trouble, several minor accidents having occurred as a result of its bad condition.

On September 12 a contract was let for the construction of the much-needed 10 miles of road from Babb northward to the international boundary. While this road is being constructed from Federal, State, and county funds, its maintenance will devolve upon the park administration.

It is encouraging also to note the activity of the State Highway Commission and various neighboring counties in improving as rapidly as possible the several approach roads to the park. Great credit should be given to the Park-to-Park Highway Association, the Y/G B-Line Association, and the Roosevelt Highway Association for their efforts and achievements in improving these various highways.

## TRAILS

The storm of June 6, which came at a time when most of our trails had been opened for the season, placed a great strain upon our maintenance funds.

During the year a portion of the trail from Sperry Chalet to Sperry Glacier was constructed, but the workers encountered much costly rockwork and only about half of the intended trail was completed.

The trail from Browns Pass to Kintla Lake is still under construction and traverses a wonderfully scenic country. Although the appropriation for this trail was cut, an effort will be made to push the trail through to its destination under partial construction.

## BUILDINGS

The following buildings were authorized in our 1925 appropriation and work on them is in progress: Ranger cabin at the head of Lake McDonald, six snowshoe cabins or patrol cabins in outlying sections of the park, two fire lookout cabins, one on Huckleberry Mountain, one on Indian Ridge, and registration station at Belton entrance.

## HYDROELECTRIC PLANT

Considerable trouble was experienced during the past year with the Pelton wheel in the hydroelectric plant at Belton headquarters. An unsuccessful attempt was made to rectify this by the installation of a new wheel under the direct supervision of an expert from the Pelton Wheel Co.

## FISH

The waters of Glacier Park have more than ever before satisfied the demands of visitors for good fishing. The work of stocking was continued throughout the season, but the extensive program of stocking planned could not be carried out completely for lack of the necessary fry and eyed eggs.

A total of 1,468,830 fry and eyed eggs were planted in park waters during the year.

## NATIVE ANIMALS

A count of wild animals in Glacier Park has been conducted during the past three years by our ranger force.

While it is manifestly impossible to obtain an exact count of wild animals in so large an area as Glacier Park, nevertheless it is believed that the estimates reflect with fair accuracy the status of our game. A noticeable increase in all species of wild life was observed since the beginning of this game check.

The hunting of predatory animals was continued during the year and mountain lions and coyotes were destroyed by ranger hunters. The small number of mountain lions caught indicates that these animals are extremely rare in the park; it is doubtful whether further hunting should be done until their number appears to increase.

The following tables show the number of different kinds of game in the park. Smaller animals were not counted, and this check covers the big-game animals only.



Animal	Actual count	Estimated numbers	Animal	Actual count	Estimated numbers
Moose.....	69	88	Sheep.....	724	1,111
Elk.....	567	706	Goats.....	343	1,600
Deer:			Bear:		
Mule.....	764	1,116	Silvertip.....	51	104
Whitetail.....	1,311	1,511	Black and brown.....	76	148

## FIRES

A total of 16 forest fires was fought and extinguished in the park during the past season at a total cost of about \$8,000. More than two-thirds of this expense could have been saved if proper equipment of portable pumps had been possessed by the park. The practice of brush burning by road contractors in dry weather, without the permission of the superintendent, has been vigorously condemned.

The following is a detailed statement of fires and their cost, also cause:

Location	Cause	Cost
Middle Fork River, west of park headquarters.	Sparks blowing across river from brush fires on H. E. Vaught's ranch.	\$171.74
Near Avalanche Creek.....	Brush fires on right of way of Transmountain Road section under construction.	3,888.66
Middle Fork River, between Belton and Egan.	Sparks scattered by railroad train.....	237.83
Foot of Apgar Ridge on Middle Fork River.	Electrical storm.....	No cost.
Foot of Apgar Mountain near North Fork of Flathead River.	do.....	1,347.55
Apgar Ridge near mouth of North Fork.	do.....	No cost.
Foot of Lake McDonald.....	Sparks from brush fires on private property.....	290.51
South Fork of Milk River.....	Camp fire not extinguished.....	12,000.00
Quartz Ridge.....	Electrical storm.....	
Bowman Ridge.....	do.....	
Total cost.....		7,936.29

<sup>1</sup> The cost of the last three fires has not yet been determined, but it is estimated at \$2,000.

## TELEPHONES

New telephone lines were authorized from Bowman Lake to Waterton Lake through Browns Pass, and from Sherburne Lake ranger station to the international boundary line, connecting with the Belly River ranger station.

## VIOLATIONS OF REGULATIONS

There were no convictions of violations of park regulations before the United States commissioner during the past season. Several motorists brought before the superintendent for speeding were converted into assistants to help enforce our speed laws.

During September of last year George E. Snyder drove into the park at the Belton entrance, colliding with the Government team and wagon. Snyder was in an intoxicated condition, and he was apprehended and tried before the United States commissioner on October 3, 1923, for reckless driving. A fine of \$500 and costs and six months in jail was imposed. Snyder served seven months when application was made for release on account of insufficient funds to pay his fine. Snyder was also charged by the Federal officers with transporting liquor, and trial was held in the United States district court at Great Falls on September 8, 1924. He plead guilty and was fined \$5 and costs.

## RECOMMENDATIONS

1. *Roads.*—Without doubt one of our most urgent needs is the completion of the Logan Pass Road. It is earnestly requested that a large appropriation be obtained for expenditure upon this road during the coming year. If a sum of \$400,000 could be made available in one year, it would be possible to interest a better class of contractors to compete for the work, and so guarantee its execution in the most efficient and satisfactory manner.

The North Fork Road requires a complete relocation and survey, including a spur road to Logging Lake and a road following Kishenehn Creek to the international boundary.

The Blackfeet Highway requires relocation, widening, and straightening in many places. Several new bridges must be placed across the Two Medicine and Cut Bank streams.

The road from Babb to Many Glacier while requiring only minor changes, must have these changes carefully planned.

Cooperation by the Washington office with the National Park Service of the Dominion of Canada is urged, in order to bring about the enlargement of Waterton Lakes National Park so that its western boundary will coincide with the western boundary of Glacier Park to guarantee the protection of great numbers of moose and deer which annually drift across the international boundary.

The assistance of the Washington office is also needed to push the completion of a road through Waterton Lakes Park to connect with our North Fork Road and Babb Road.

An international conference of park executives and superintendents of Canada and of the United States is recommended for our mutual benefit.



2. *Camp grounds.*—The rapid development of automobile camp grounds on a large scale is required. The completion of the Transmountain Road will bring into Glacier Park a flood of motor campers. A special appropriation of \$15,000 per year for the next four or five years will be needed.

3. *Telephones.*—The great need of telephonic communication between administrative headquarters of the east and west sides of the park has been demonstrated this season.

4. *Trails.*—Ten miles of new trail are needed, extending northward along the Garden Wall from Granite Park, at the 7,000-foot level, to Ahern Pass and on to Flattop Mountain at Mount Kipp. A short trail from Ahern Pass to Helen Lake is a logical sequence to the Granite-Kipp trail.

Restoration of trail appropriations cut from our 1926 estimates is recommended.

5. *Privately owned lands in Glacier Park.*—An act of Congress should be secured authorizing appropriations to purchase private lands within Glacier Park. A similar act is required to exchange State lands within the park for public domain lands outside.

6. *Tourist accommodations.*—A conference of concessioners is recommended to consider plans for the development of accommodations along the route of the Transmountain Road. The landscape engineering department should be represented at this conference at which should be discussed the matter of permanent camps. The establishment of a series of horse and hiker camps throughout the northern section of the park is recommended.

7. *Buildings.*—At Belton headquarters, a bunk and mess house is badly needed. The residence for the assistant superintendent and the United States commissioner, which were cut from the 1926 appropriation should be stoutly defended for 1927.

The ranger station cut from the 1926 appropriation will have to be built in 1927, since repairs made to the old building can not make it suitable for permanent occupation.

Removal of the public-comfort station from its present location between the administration office and the superintendent's residence, to its proper place opposite the registration station, is needed.

More snowshoe cabins are required to safeguard the lives of our rangers when on game patrols during the severe winter months.

At Glacier Park suitable fences are needed to keep the great numbers of the Indians' horses and stock out of the lawns and door yards of the park community.

A museum building is very badly needed at Many Glaciers. The work of the park naturalist has been carried on, under great disadvantage, in one corner of the hotel lobby. The assembling of a collection of representative specimens of mammals and birds of the park, has been started and the housing of this and other interesting collections is a matter that deserves consideration.

8. *Electric power.*—The present hydroelectric plant at headquarters is overtaxed by the burden of merely lighting the community. There is not sufficient current to drive the machinery of our carpenter shop. Plans should be developed for a large hydroelectric development as a source of power and light.

9. *Fish.*—The Bureau of Fisheries should be induced to operate its hatchery at Glacier Park to maximum capacity.

#### CONCLUSION

A grateful acknowledgment is made of the invaluable assistance of the headquarters staff in helping me to master details of park administration in this my first season. The intimate knowledge of the entire park business, possessed by Assistant Superintendent Hutchings, has been chiefly responsible for the successful administration of the park this season.

Grateful acknowledgment is due to my predecessor, J. Ross Eakin, for the memoranda which he left before his departure, and for the numerous good works which he had initiated during his administration at Glacier.

I must also extend acknowledgments to the hotels and the motor transport company for the accommodations they have always cheerfully furnished; and to the saddle horse company for the frequent use of horses on my many trips.

The encouragement and assistance given me by Superintendent Albright, field assistant to the director, at Yellowstone Park, has been an important feature in enabling me to cope with many difficult problems.

The visit of Director Mather, from August 1 to August 11, was a source of great inspiration to the entire staff and leads me to express the hope that more frequent contact with members of the Washington office may be made possible.

#### ROCKY MOUNTAIN NATIONAL PARK

ROGER W. TOLL, Superintendent, Estes Park, Colo.

#### GENERAL STATEMENT

Rocky Mountain National Park was created by the act of January 26, 1915 (38 Stat., 798). Under the act approved February 14, 1917 (39 Stat., 916), an area of approximately 43 square miles was added, making the present area of the park 397½ square miles. About 8 per cent of the area within the park boundaries is held in private ownership, having been acquired prior to the creation of the park. The village of Estes Park is the principal eastern entrance to the national park and is a mile and a half east of the park boundary. Denver, the largest city near the park, is 70 miles distant. The eastern side of the park is reached by three automobile routes and the western side is reached by way of Grand Lake. The entire park lies at an elevation of more than 7,500 feet and is free from oppressive heat in summer. The park is easily and quickly reached from large centers of population. These factors, combined with the beauty and grandeur of the region, draw large numbers of visitors every season.

The park contains 68 miles of road, about 100 miles of trail, and 75 miles of telephone lines.

#### ORGANIZATION

The permanent organization of the park consists of the superintendent, chief clerk and special disbursing agent, clerk-accountant, chief ranger, assistant chief ranger, two permanent rangers, and one auto mechanic. In addition, one temporary clerk-stenographer, one information clerk, one ranger-naturalist, and nine temporary rangers were

employed during the tourist season. The superintendent's headquarters were located in Denver from November 1 to April 14, and in Estes Park the remainder of the year. The total park force, during June, July, and August, including road crews, trail crews, etc., numbered from 60 to 85 men.

The members of the organization have worked with a conspicuous degree of cooperation and loyalty to the service that has resulted not only in facilitating the operation of the park, but in making a considerable forward step in the development of the park.

#### WEATHER CONDITIONS

An exceptionally long, cold winter was followed by an exceptionally warm, dry summer. This latter condition, while ideal for travelers and campers, created a very serious fire hazard and resulted in several small fires. These were extinguished, however, before they caused much damage.

Observations made at the fish hatchery showed a maximum temperature of 93 degrees on June 25, and a minimum temperature of 28 degrees below zero, on December 31.

#### WILD ANIMALS

All wild animals seen have been in excellent condition, though they have not appeared in as large numbers as usual, the lack of young being especially noticeable. There seems to have been a decided decrease in the birth rate of the larger animals, such as deer, elk, and sheep. Whether this is due to the heavy snows of last winter, to predatory animals, to the State-open hunting season outside the park, or to other causes, it is impossible to say. The park was patrolled during the open hunting season last fall. The predatory animal campaign by park rangers last winter netted the following results: 14 bobcats, 3 coyotes, 2 badgers, and 1 red fox. Four mountain lion were killed near the eastern boundary of the park.

#### FISH PLANTING

The fish hatchery located within the boundary of the national park is operated by the State of Colorado. Mr. Gaylord H. Thomson is superintendent of the hatchery. The State Fish and Game Commission distributes its total supply of trout eggs to this and other hatcheries in the State. The Estes Park hatchery has a capacity for about 1,000,000 eggs, but this capacity is not always fully utilized.

Application was made to the United States Bureau of Fisheries for trout eggs to supplement those furnished by the State. In December 200,000 Loch Leven eggs were received. In July 400,000 blackspotted trout eggs were received, and in August an additional 250,000 blackspotted trout eggs were sent us. These blackspotted (or native) trout eggs came through the hatchery at Yellowstone Park. Most of these latter eggs will be placed in lakes and streams during the month of September, and will make it possible to stock a number of lakes located in high country which have never been stocked and which are practically inaccessible for spring stocking.

The total output of the hatchery during the year 1924 will be approximately as follows:

Received from the State of Colorado:			
Rainbow	-----	200,000	
Eastern Brook	-----	400,000	
Native (blackspotted) <sup>1</sup>	-----	280,000	
			880,000
Received from the Bureau of Fisheries:			
Loch Leven	-----	200,000	
Native	-----	650,000	
			850,000
Total eggs handled at the hatchery	-----		1,730,000

The planting of these fish is handled by the Estes Park Fish and Game Association. The fish that have been planted so far this season are as follows:

Kind of fish	Where planted	Number planted	Total
Loch Leven	Lake Chiquita	65,000	200,000
Do	Emerald Lake	70,000	
Do	Cub Lake	65,000	
Rainbow	Kept in rearing ponds until 3 to 5 inches in length, then turned into Fall River near Elkhorn.	200,000	200,000
Eastern Brook	Beaver dams in upper Horseshoe Park	50,000	400,000
Do	Mill Creek at John Griffiths	25,000	
Do	Glacier Creek at Tuxedo Park	25,000	
Do	Moraine Park nursery pond	90,000	
Do	Beaver dams near Spragues	40,000	
Do	Boulder Creek	40,000	
Do	Glacier Creek beaver dams	30,000	
Do	Country Club nursery pond	20,000	
Do	West Creek	30,000	
Do	Cabin Creek at Columbine Hotel	30,000	
Do	Mill Creek at boys' camp	20,000	930,000
Native	Still in hatchery		
Total number of eggs	-----		1,730,000

<sup>1</sup> Green eggs subject to about 20 per cent loss in hatching.



## CAMPING

The number of camping parties was very much larger this season than ever before. This was partly due to the warm, dry weather which prevailed throughout the summer, and partly to the opening of the new camp at Aspenglen, on the Fall River road. An attendant was stationed at both the Aspenglen camp and the Glacier Basin camp, to see that the grounds were kept in sanitary condition, that fires were extinguished, and that other rules of the park were complied with.

## SPECIAL CAMPS

A party of 800 boys belonging to the Olinger Highlanders, of Denver, were encamped for 10 days in Glacier Basin. Boy Scout parties, from several localities, were also encamped in Glacier Basin at various times during the summer.

## TRANSPORTATION

The transportation franchise in this park is held by the Rocky Mountain Parks Transportation Co. Their equipment includes seventy-six 11-passenger busses and twenty-six 7-passenger touring cars. The approximate number of passengers carried on various trips during the season is as follows:

Over Fall River road, between Estes Park and Grand Lake-----	6,844
Fall River Pass and Highdrive Loop-----	1,760
Loop service to hotels-----	1,200
Special service, other than scheduled trips-----	1,500

Total passengers carried in the park----- 11,304

The Transportation Co. handled 128 organized tours into the park, with an aggregate of 3,200 passengers.

## HOTELS AND CAMPS

There are 35 to 40 hotels, camps, and lodges, having a combined capacity of approximately 4,000 guests, located in the park, or in or near bordering villages, so that practically every part of the park is accessible from them.

Six hotels and lodges are operated on Government land, within the park, under franchise from the National Park Service. These are Grand Lake Lodge; Sprague's Hotel, in Glacier Basin; Fern and Bear Lake Lodges; Forest Inn, at "The Pool"; and Timberline Cabin, on Longs Peak Trail. The newly established Bear Lake Trail School was operated this season, for the first time, in conjunction with Bear Lake Lodge. Several cottages were built and a new system for sewage disposal was installed at Grand Lake Lodge.

## INFORMATION BUREAU

The information bureau, in the superintendent's office, continued to prove its usefulness to the traveling public in the way of free information regarding hotel and cottage accommodations, camping, road and trail trips, points of interest, and in the sale of Government publications.

## NATURE STUDY AND GUIDE SERVICE

The nature study and guide service, which was first offered to the public last season, was continued during the past summer with marked success. Mr. P. A. Smoll, of Colorado Springs, was engaged as park naturalist. Mr. Smoll delivered lectures on the wild life of the park, with special emphasis on conservation and protection, and conducted field trips. The lectures were given at the school house in Estes Park, and at the various hotels and camps in the park. An exhibit of the nine conifers that make up the forests of the park was arranged at the Administration Building. A gift of 30 excellent photographs of birds of this region, taken under natural conditions, was received from Mr. Clark Blickensderfer, and will be placed in the Administration Building.

## WINTER SPORTS

Winter sports activities were more popular last winter than ever before. The Colorado Mountain Club, Olinger Highlanders, and other parties, visited the park for the purpose of enjoying the skiing, tobogganing, and cross-country runs. The local ski club engaged a ski instructor and put on a program of winter sports, which culminated on March 15-16 in a ski tournament on the north slope of Old Man Mountain. At this tournament there were many entries from various parts of Colorado, besides competition among four men in the national amateur class.

## TRAVEL

Travel figures this season show an increase over last year. Checkers were on duty at the three principal gateways from June 15 to September 15, inclusive, this being the same period as last year. All persons passing through the gateways during the hours that checkers were on duty were counted, in order to get the total travel over the roads, and deduction was made for persons entering the park more than once, in order to get the number of visitors. Since no entrance fee is charged at gateways, it is not desirable to stop cars in order to register their occupants, hence it is not always possible to tell who are entering the park for the first time in the season, and the figures given for visitors are necessarily approximations rather than exact figures. It should also be noted that the park is open to travel 24 hours per day throughout the year, while the count is made only during 9 hours per day during a three months' period. Also, there is no count made on the Longs Peak Road, where there is a heavy travel, nor on numerous foot and horse trails which enter the park at various points. In making up this year's travel report, the following items have been included:

1. Actual count at three entrances, from June 15 to September 15, inclusive.
2. Estimated travel missed at these entrances when checkers were off duty.



3. Estimated travel from September 16 to June 14, inclusive, when no count was made at gateways.

4. Travel at other entrances, not included in the above.

*Estimated travel for 1924*

	Total travel		Visitors	
	Cars	People	Cars	People
Actual count at three principal gateways:				
June 15-30, inclusive.....	5, 169	17, 143	3, 706	13, 647
July.....	16, 318	59, 571	12, 597	52, 067
August.....	17, 965	62, 241	13, 435	53, 542
September 1-15, inclusive.....	3, 366	11, 666	2, 201	9, 676
Total actual count.....	42, 818	150, 621	31, 939	128, 932
Estimated:				
a. Missed by checkers at these entrances during same period, 30 per cent.....			9, 582	38, 579
b. Travel at these entrances during months of year not counted:				
October, 1923.....	500	2, 000		
November.....	75	300		
December.....	25	100		
January, 1924.....	25	100		
February.....	50	200		
March.....	500	2, 000		
April.....	500	2, 000		
May.....	750	3, 000		
June 1-14, inclusive.....	3, 000	12, 000		
September 16-30, inclusive, other.....	3, 000	12, 000		
			8, 425	33, 700
c. Travel at entrances not included in above figures:				
Longs Peak Road.....			3, 750	15, 000
Wild Basin, on foot and horseback.....				3, 000
Other portions of park, on foot and horseback.....				5, 000
Total estimated visitors.....			53, 696	224, 211

The actual count by type of travel is as follows:

	Total travel		Visitors	
	Cars	People	Cars	People
Private cars:				
General.....	24, 356	86, 275	24, 670	86, 276
Camping.....	7, 200	25, 136	7, 200	25, 136
Repeaters.....	7, 907	18, 856		
Rocky Mountain Parks Transportation Co. cars.....	1, 539	9, 867		9, 867
Hotel cars.....	656	1, 943		1, 943
Rent cars.....	119	476		476
Trucks.....	972	2, 834		
Motorcycles.....	69	82	69	82
Horseback.....		3, 391		3, 391
Pedestrians.....		1, 761		1, 761
Total.....	42, 818	150, 621	31, 939	128, 932

The actual count by automobile entrances is as follows:

	Total travel		Visitors	
	Cars	People	Cars	People
Beaver point.....	22, 017	70, 509	13, 096	56, 220
Grand Lake.....	5, 649	19, 176	5, 355	17, 099
Fall River.....	15, 152	60, 936	13, 488	55, 613
Total.....	42, 818	150, 621	31, 939	128, 932

The private cars, listed by States, are shown below.

	Cars		Cars
Alabama.....	2	New Hampshire.....	1
Arizona.....	51	New Mexico.....	49
Arkansas.....	82	New York.....	112
California.....	446	North Carolina.....	2
Colorado.....	28,683	North Dakota.....	6
Connecticut.....	8	Ohio.....	234
Florida.....	30	Oregon.....	18
Georgia.....	1	Oklahoma.....	827
Idaho.....	26	Pennsylvania.....	69
Illinois.....	739	Rhode Island.....	2
Indiana.....	129	South Carolina.....	1
Iowa.....	742	South Dakota.....	39
Kansas.....	1,902	Tennessee.....	24
Kentucky.....	11	Texas.....	1,086
Louisiana.....	36	Utah.....	30
Maryland.....	6	Virginia.....	6
Maine.....	3	Washington.....	19
Massachusetts.....	18	West Virginia.....	15
Michigan.....	146	Wisconsin.....	95
Minnesota.....	40	Wyoming.....	633
Missouri.....	969	District of Columbia.....	3
Mississippi.....	8	Canada.....	2
Montana.....	26	Hawaii.....	2
Nebraska.....	2,050		
New Jersey.....	34	Total.....	39,463

It will be seen from the above tabulation that somewhat more than one-fourth of the private cars entering the park come from States other than Colorado. The proportion of visitors from outside Colorado is even larger than this, since many Colorado cars carry passengers from other States, while the passengers carried by the Rocky Mountain Parks Transportation Co. are largely from States outside of Colorado.

The Fall River Road runs about 37 miles through the park, and is our principal scenic road. The best method of approximating travel over this road is to take the sum of the inbound and outbound travel through the Grand Lake entrance. The travel count through this entrance is as follows:

	Total travel		Visitors	
	Cars	People	Cars	People
Inbound travel, Grand Lake entrance.....	5,649	19,176	5,355	17,099
Outbound travel, Grand Lake entrance.....	4,785	18,190	3,956	18,011
Total.....	10,434	37,366	9,311	35,110

#### PUBLIC CAMP GROUNDS

During the year three public camp-ground sites were purchased with money appropriated for the purpose. Two of these are located on the Fall River Road,  $4\frac{1}{2}$  and  $8\frac{1}{2}$  miles, respectively, from Estes Park, the other being located on the Highdrive,  $2\frac{1}{2}$  miles from Estes Park. Only one of these sites, viz, the Aspenglen camp,  $4\frac{1}{2}$  miles from Estes Park, was placed in condition for use this summer. One of the others will be ready for use next summer. A road was built from the main Fall River Road, one-fourth mile, to the Aspenglen camp, toilets were installed, a supply of pure spring water was developed, and a portion of Fall River was diverted through the grounds, so as to provide running water for campers. The location is very beautiful, and the grounds proved popular with campers from the very beginning.

#### ROADS

The work of removing snow from the Fall River Road was begun on May 14, and the road was opened to travel on June 19, though the help of teams was necessary for several days in getting automobiles over the Pass. The opening of this road was greatly hindered by a  $3\frac{1}{2}$ -foot snowfall the latter part of May which filled all cuts previously made. Some snow removal was necessary for 6 miles on each side of Fall River Pass, or on a total of 12 miles of road. The maximum depth of snow on the road at Fall River Pass was 22 feet 6 inches on May 20. On June 19, when the road was opened to travel, the maximum depth was 19 feet. The opening of the road was further hindered by the collapse of a retaining wall, 17 feet high and 50 feet long, at a point 16 miles from Grand Lake, and by a snowslide from Mount Chapin, 13 miles from Estes Park, which ran three times and covered 210 feet of the road with snow to a maximum depth of 20 feet. The total cost of snow-removal work this year was \$4,058.50, of which amount \$2,500 was paid by the National Park Service, the rest of the expense being borne by the Rocky Mountain Parks Transportation Co.

A crew of men and teams, under Ralph V. McQueary, was engaged throughout the summer in surfacing and other improvement work on the Fall River Road, on the western slope. An air-compressor crew was engaged in blasting rock and widening the road on

the eastern slope. Other small crews were engaged in general maintenance work at five points on the Fall River Road and on all the roads in the park. The retaining wall on the Fall River Road, which collapsed early in the season, was rebuilt with solid masonry and cement down to bedrock.

#### TRAILS

A new trail, 3 miles long, was constructed between Bear and Odessa Lakes. This trail opens up and connects some of the most beautiful sections of the park. A portion of the Flattop Trail, on the eastern slope, is now being rebuilt. The Little North Inlet Trail, on the western slope, from Flattop Mountain to Grand Lake, was reopened and portions are being reconstructed. Portions of the Lawn Lake Trail were reconstructed. A new bridge was constructed on the Fern Lake Trail at "The Pool" to take the place of the bridge washed away by high water early in June. General maintenance work was done on all trails.

#### NEW ADMINISTRATIVE HEADQUARTERS

The new Administration Building in Estes Park was completed last fall, and the park offices were moved to the new headquarters on October 5, 1923. The building contains five rooms on the main floor, with basement containing hot-air heating plant, while the attic affords storage space. This building is a great improvement over the rented quarters previously used.

#### MOSQUITO-CONTROL WORK

The mosquito-control work at Grand Lake, which was begun last year, was repeated this season and will probably be continued each year.

#### PLACING OF SIGNS

According to the plan adopted at the 1923 conference, most of the park signs were replaced by new standard vitreous enamel signs. The number of replacements and new signs in this park was 196.

#### BUILDINGS

The following buildings were constructed on the utility site 2 miles from Estes Park:

A machine shop, 30 by 78 feet, where the motor equipment can be overhauled during the winter months and kept in repair during the summer months.

A shed garage, 22 by 90 feet, where nine trucks may be protected from winter weather.

A warehouse, 28 by 48 feet, is practically completed. This will facilitate the storing of equipment and supplies in a central location and will result in more economical handling of supplies.

A mess house for a road crew is under construction on the utility site, and it is planned to construct a small dwelling house on the same site.

A log ranger station is under construction at Fern Lake.

It is planned to construct one building for road crew quarters on the Fall River Road before the close of the year.

Public toilets were constructed at Fall River Entrance Gateway, at Aspenglen Camp Ground, and an additional toilet was built at Fall River Pass.

#### THE RENT-CAR SITUATION

On account of its location, 70 miles from Denver, this park has considerable difficulty in enforcing the regulation that excludes cars operating for hire in the park. A number of such cars were prevented from entering the park this season. On July 13 two cars operated by the Boulder firm of Malloy & Macleary were stopped, their drivers placed under arrest, and taken to the United States commissioner at Fort Collins. This case is still pending.

On August 16 a car operated by the "Champa 3" Auto Livery, of Denver, was stopped and its driver placed under arrest. A fine of \$50 was imposed by the Federal district court in Denver.

#### NEEDS OF THE PARK

Practically all of the roads of the park require extensive improvement to put them into condition satisfactory to the traveling public and creditable to the Federal Government. The roads should be widened to a passing width of approximately 20 feet. Sharp turns should be widened, so that approaching cars will be visible. Grades should be reduced to 6 per cent wherever practicable.

When the road budget becomes available, it is planned to purchase a steam shovel which can be used advantageously in widening the roads. This shovel can also be used for snow removal, so as to simplify the present problem of opening 12 miles of road by hand shoveling.

The more important trails should be improved and reconstructed where present location is not suitable. Additional trails should be constructed to reach some particularly scenic points which are not now accessible to the average visitor.

The two camp grounds which have been purchased, but not as yet developed, should be made accessible by the construction of roads. They should also be provided with a safe supply of drinking water and otherwise developed so that they will meet the needs of the public. It would be very desirable to construct a community house at the Aspenglen camp ground where it would serve as quarters for a camp attendant and also provide shelter to visitors in case of storm.

A group of buildings is needed near timber line on the east side of Fall River Pass to accommodate the men that are employed in the spring to open the road, and also to accommodate the men who maintain the road throughout the summer months. Heretofore it has been necessary for men to camp in tents above timber line at an elevation of 11,500 feet. During the months of May and June, when this work is in progress, weather conditions are always bad and it is difficult to secure men for this work or to hold them after they have arrived. Suitable buildings would greatly lessen the hardship and suffering that these men go through and would aid our employment problem. Quarters for road crews are also needed in several other locations.



A stable is needed at the utility site. A ranger station is needed at Estes Park on the same site as the Administration Building. Quarters for the clerical employees are lacking and should be provided as soon as possible.

### HAWAII NATIONAL PARK

THOMAS BOLES, Superintendent, Volcano House, Hawaii, United States of America

#### GENERAL STATEMENT

Hawaii National Park, comprising 187 square miles in the Territory of Hawaii United States of America, was established by Congress August, 1916, and formally dedicated July, 1921; local administration began February, 1922. General location in mid-Pacific Ocean, 2,200 miles southwest from San Francisco and Los Angeles, and 200 miles southeast from Honolulu. It consists of three sections.

Kilauea section, 125 square miles on Island of Hawaii, includes famous Kilauea Volcano; 40-pit craters, many steaming, two recently in eruption; vast fern jungles and tropical forests; miles of tunnels and caverns, many still unexplored; deserts of volcanic ash gashed with terrific earthquake cracks, many emitting steam; thousands of acres of prehistoric and recent lava flows with rugged and fantastic formations; sulphur banks; tree molds, many formed during past season by molten lava gushing from new earthquake cracks in forest. All conveniently accessible via park roads or well-marked trails.

Mauna Loa Summit, 28 square miles, nearly 3 miles high, also on Island of Hawaii, contains Mokuaweoweo Crater, which at long irregular intervals sends floods of lava surging to the sea. Active on flank in 1916 and 1919. Connected with Kilauea section by good 30-mile horseback trail.

Haleakala section, 34 square miles, on Island of Maui, contains Haleakala, "House of the Sun," the world's largest extinct crater, 10,000 feet high, 2,600 feet deep, 8 miles across. On the floor of this giant crater is a row of symmetrical cinder cones, some 900 feet high, dwarfing the Egyptian pyramids in comparison. Good automobile road to within 8 miles of the summit; good horseback trail to summit, along rim, thence down into and across floor of crater. Excellent camp sites in crater with water and forage. Comfortable concrete Rest House at summit, sleeping 30.

#### LOCAL DEVELOPMENT

Kilauea Volcano being at present the objective of nearly all visitors, our modest appropriation was used in administering this area and maintaining existing roads in excellent condition, notwithstanding season's heavy travel. Loan of road machinery by the county assisted greatly in this work. All trails are in good shape and all points of interest properly signed. A small cottage for housing road workers was purchased. New bridge and stairway to lava tube were built; also one across earthquake crack in front of park headquarters.

#### FORESTS

Floral abundance offsets faunal famine, many finding our forests as interesting as the volcanic features. "Kipuka Paoula," a small oasis in a lava flow, contains nearly every variety of Hawaiian trees. Through the courtesy of Charles S. Judd, superintendent of forestry, an arboretum of several acres has been started near by in which many other varieties of native trees will be planted, especially the sandalwood and other trees now almost extinct. Just beyond is a magnificent koa (Hawaiian mahogany) preserved when a lava flow stopped near its base. The road to the volcano winds through a jungle of ferns, many 40 feet high, arching gracefully over the highway.

#### WEATHER

Although close to the Equator Kilauea's 4,000-foot elevation provides equable climate; the days averaging 70°, the nights 55°. The mean temperature for December and June differed but three degrees. One may hike in light clothing, but must sleep under heavy blankets. No snakes nor mosquitoes. The frequent rains cause no mud, the water vanishing into porous ground or flowing into near-by crevices and coming up next day as live steam. The superintendent's office is comfortably heated by controlled volcanic steam from one of these vents.

#### KILAUEA MILITARY CAMP

Appreciating the natural wonders and bracing atmosphere, the War Department maintains a recreation camp in the park. Over 4,000 officers and men from Honolulu spent their vacation here during the past season. Their lease has been greatly improved by landscaping and the erection of several attractive huts for officers.

#### PUBLIC CAMP SITE

The public camp site in the Ohio forest, convenient to all park trails, was well patronized by picknickers this season. Cooking grates and drinking water are provided by the Government.

#### HOTEL ACCOMMODATIONS

Kilauea Volcano House, a well-managed modern hotel with 120 rooms, including several cottages, is delightfully located facing Kilauea Crater, and within easy walking distance of all points of interest. From its windows may be seen the impressive steam columns or the lurid glow of molten lava. The invigorating climate encourages the guest to remain longer and hike the trails or try the sporty nine-hole golf course near by, with earthquake cracks for hazards.

## SUMMER CAMP

Early this season permission was granted the hotel company to erect several small cottages for a summer camp, but the unusual volcanic activity caused the construction to be deferred until this winter. However, this camp will be open early next season, pending which the company has authorized very low weekly and monthly rates at the hotel.

## OBSERVATORY

This institution, supported by the Federal Government, with aid from private sources, continued the work of observing the various phases of the volcano and recording seismic disturbances. In July the observatory was taken over by the Geological Survey of the Interior Department. The cooperation of Acting Director Finch during the past season was greatly appreciated by the Park Service.

## VOLCANIC ACTIVITY

During the past season Kilauea Volcano was unquestionably the most stupendous spectacle of the national park system, surpassing even its own record for the past century.

After the collapse of last September the crater slowly filled, until by December the pit contained a 50-acre lake of seething lava, 2,000° temperature. Lava geysers traveling across the surface sent up incandescent sprays 150 feet high. On December 27 these geysers spouted 10,000,000 cubic feet of molten lava within 30 minutes.

In February, after three months' brilliant display, and with the crater nearly full, a large dome slowly formed on the lake, which burst with a roar, sending large sheets of lava many feet into the air. As this dome collapsed it was replaced by an enormous whirlpool, into which the liquid rock swirled with a trembling rumble. Within two days all lava disappeared, leaving only a 500-foot smoking pit into which the cooling walls crashed as avalanches.

In May the volcanic gases unexpectedly returned, and the vents which had been choked by the crumbling walls were cleared by scores of tremendous explosions hurling ashes for miles into the air, and accompanied by electrical displays extending 10 miles high. Bolts of lightning from this cloud destroyed telephone poles 6 miles away.

When the ash cloud or column reached a height of about 3 miles it would spread out like a mushroom, darkening the entire sky even at midday. A thunderstorm was immediately created, and the rain passing through this cloud reached the earth as thin mud, plastering the vegetation for miles around and flattening the ferns to the ground, breaking down many small trees, and riddling the delicate foliage with pebbles of ash. Red-hot boulders weighing many tons were hurled over 1 mile, obliterating the near-by section of road by the tremendous bombardment. Other park roads were coated with slimy insoluble ash, a menace to traffic until swept off by hand. During this activity the park was rocked by thousands of earthquakes.

Danger lines were established by the Park Service at the first warning, and over 6,000 persons viewed these eruptions from the hotel and other points outside the danger zone. In the first big eruption the superintendent was making a safety inspection of the rim of the crater and he and two men with him were slightly injured. A few days later a too daring amateur photographer entered the danger zone and was killed by a flying boulder 2,000 feet away from the pit.

During the three-week period of explosive eruptions the crater enlarged to four times its former size, the opening now being 200 acres in area and 1,500 feet deep. During these eruptions Kilauea Volcano was the sight of a lifetime for those so fortunate as to witness it.

Six weeks later, when all was again normal, a roaring geyser appeared at the bottom of the pit, sending up a steady spray of lava 200 feet high, building up a small cinder cone, and forming a 10-acre lava lake on the floor of the pit. After two weeks' brilliant display this fountain weakened, and now the volcano is again dormant, with only a glowing crack seen now and then at night in the surface of this black lake. Immense columns of steam, however, rise continually out of the pit and in the bright sunlight are most impressive to the beholder.

## TRAVEL DURING 1924

Travel to the Hawaiian Islands is increasing, not only from the rest of the United States, but from foreign countries. Two more steamer lines were established, and the steamer now serving Alaska during the summer months expects to operate between Seattle and Honolulu during the winter. The direct service between Los Angeles and Hawaii means much to this park. The new Matson liner will cut two days from the present time to Honolulu.

Federal aid for Territorial highways insures the early extension of the concrete highway from Hilo to within 5 miles of the park entrance.

Travel to this park is fairly well distributed over the twelve months, which enables the Interior Department to administer this area with a comparatively small force.

The visits of many world tours and ships from the American, British, and Japanese Navies; the excellent and effective publicity obtained for the park through the Hawaii Tourist Bureau, especially through the 100,000 national park folders; the hearty co-operation of the local press of Hilo and Honolulu; and the astounding performance of the volcano all combined to bring the attendance up to 52,110, compared with 41,150 last year.

## RECOMMENDATIONS

Appropriations which will permit full administration and protection of all areas of the Hawaii National Park.

Living quarters for all permanent employees.

Checking station at park entrance.

Additional roads and trails opening up new areas.

Extension of boundaries to include desirable areas.

Continued publicity.



## CONCLUSION

The many natural wonders of this area, the variety of climates, from the sultry sunshine or romantic moonlight of the South Seas to the crisp air at Haleakala's summit, or perpetual snow on Mauna Loa, combined with the knowledge that the United States Government is backing this park, guarantees a big future for the Hawaii National Park.

## MOUNT MCKINLEY NATIONAL PARK

HENRY P. KARSTENS, Superintendent, McKinley Park, Alaska

## GENERAL STATEMENT

Mount McKinley National Park was established by Congress in February, 1917. With the extension of the eastern boundary approved January, 1922, the park contains 2,645 square miles. It is situated in south-central Alaska, includes a section of the great Alaska range, and is about 100 miles long northeast and southwest, with an average width of about 26½ miles. The altitude is from 1,800 to 20,300 feet, the latter elevation the summit of Mount McKinley.

Temporary headquarters and residences of personnel are located at McKinley Park, a station on the Alaska Railroad 348 miles from Seward, the coast terminal, and 120 miles from Fairbanks, the northern terminal and the metropolis of interior Alaska.

## ADMINISTRATION

The administration of the park is vested in a superintendent and two rangers, one ranger having been added July 1, 1924. Two prosecutions for illegal game killing were made; one conviction, one acquittal.

## ROADS AND TRAILS

In 1923 the Alaska Road Commission expended \$5,000 on a road from McKinley Park into the park. The commission is now doing more extensive work and by fall will have a highway completed to the head of Hines Creek, 6 miles.

The park road budget allotted to this park \$272,700 to be expended during the next three years. Upon completion of this program many of the more interesting features—Mount McKinley, its surroundings, and the big game—can be reached. For the harder travelers saddle or hiking trips may be made through the low passes in the hills near the Alaska range.

The three-year road program includes improvement to the crude trail already crossing the park, making it a sled trail. Tent shelters with stoves and signs to guide travelers are being maintained.

## DESTRUCTION OF GAME

There was still some wanton destruction of game during the year, especially during the hunting season of 1923, when the superintendent was in the States attending the national park conference. There was then but one ranger, who could not safely leave headquarters more than a few hours at a time.

The butchering done by prospectors who are allowed by law to kill game "when actually short of food" is having effect in the eastern portion. Comparatively few caribou ranged in that vicinity, and this year to August 1 very few have been seen. Large herds have been seen in the western portion. Mountain sheep have fared better. The results of special efforts in their behalf are gratifying. They are returning to the hills along the trail in bands of from 20 to 100.

## TRANSPORTATION

A pack and saddle train has been operating under a permit the past two seasons. The permit contemplated three camps forming a chain extending 50 miles into the park, but only one camp, at Savage River, 12 miles from the railroad, has been erected.

## VISITORS

On July 26 the Reedy party of 100 from Texas were at the park entrance. The entire park personnel was engaged in fighting forest fires and were unable to meet them. To August 1 about 160 visitors had stopped at the entrance. Many of them did not attempt to enter because of the pioneer conditions and cost. A party of four tourists, men and women, made a winter trip into the park last April before the "break-up" and enthusiastically demonstrated the possibility of the park as a winter as well as a summer resort. A total of 62 people actually visited the park.

## PUBLICITY

An effort was made during the year to overcome the indifference if not animosity to the national park idea among the people of Alaska and the results are encouraging. Popularizing the project through the Alaska daily press and other publications, personal letters, talks before various civic and fraternal organizations, moving pictures, and personal conversations have been the means employed.

## FOREST FIRES

The entire force was engaged much of July in fighting forest fires. Surrounding McKinley Park Station and park headquarters about 30 square miles were burned over, marring the landscape in every direction, which will require years to restore. An extremely dry season and a high wind made it the most spectacular and unmanageable fire seen in years. It reached the very tops of the mountains, burning the timber at their bases and the moss and lichens above timberline. Every man, woman, and child



in the vicinity were at work for days extinguishing small fires near the buildings and otherwise caring for property. Headquarters, office, and household effects of the park people, with horses and wagons, were cached on a gravel bar in Riley creek for several days. No park buildings were destroyed. Three-fourths of a mile of irreparable damage was done to timber along the new highway.

With portable power fire-fighting equipment such fires could be taken care of in their incipency.

#### TELEPHONE LINE

A telephone line of duplex rubber-covered copper wire has been laid from McKinley Park to Savage River. Material is at hand for extending the circuit to Igloo, about 18 miles farther. The material and instruments were furnished by the Alaska Road Commission, the work of installation done by the park force.

#### MINING AND PROSPECTING

Prospecting in the eastern portion has been pretty well abandoned. A number of prospectors formerly in that section have gone elsewhere as nothing to encourage them has been found. Aside from a silver lead lode, as yet of unknown value, found at Copper Mountain, no important mineral deposits have been discovered.

#### RECOMMENDATIONS

New headquarters and permanent buildings.  
Increase of personnel.  
Forest fire fighting equipment.

### GRAND CANYON NATIONAL PARK

J. R. EAKIN, Superintendent, Grand Canyon, Ariz.

#### GENERAL STATEMENT

Grand Canyon National Park, established by act of Congress, February 26, 1919, is situated in Coconino County, Ariz., and embraces 958 square miles, covering 103 miles of the windings of the Colorado River in its bed a mile below the earth's surface. The titanic main gorge, from 8 to 20 miles wide at the top, with its labyrinthal side canyons, inner mountainous peaks and precipices done in kaleidoscopic colorings, forms "by far the most sublime of all earthly spectacles."

The park is reached by the A., T. & S. F. Railway, branching off at Williams on the main line, 60 miles to the south. Motorists traveling west on the National Old Trails Highway turn north at Maine, about midway between Flagstaff and Williams, or take the road from the latter place if they are traveling east. The north rim of the canyon is reached by motor from Cedar City, Utah, on the Union Pacific System or from Marysvale, Utah, on the Denver & Rio Grande Western Railroad, through Kanab, Utah and Fredonia, Ariz. Prior to its establishment as a national park and since January, 1908, the area was reserved as a national monument, under charge of the United States Forest Service.

#### ADMINISTRATION

The park is administered by a superintendent, assisted by an assistant superintendent and the clerical and the ranger force, the latter consisting of a chief ranger, an assistant chief ranger, and eight rangers.

#### TOURIST ACCOMMODATIONS AND FACILITIES

On the south rim and in the canyon, tourists are accommodated in hotels and camps operated by Fred Harvey. El Tovar Hotel and Bright Angel cottages on the south rim give excellent service to visitors, and for those who take the overnight trips into the canyon, Hermit Creek cabins and Phantom Ranch are particularly appealing and up to the standard set by the Harvey Co.

On the north rim the Wylie Way Camp, operated by Mrs. Elizabeth McKee, provides excellent accommodations for visitors.

#### TRANSPORTATION

The Fred Harvey Co. on the south rim furnishing autos, horses, and mules, and Jensen & Vaughn, saddle-horse operators on the north rim, adequately take care of visitors to the park to enable them to see the park to the best advantage. Since the first of October, 1923, the Harvey transportation department has added 30 head of mules, six 6-passenger busses, and four 10-passenger busses to their transportation equipment.

#### TRAVEL

Much of the travel to Grand Canyon National Park is linked up with the trips of easterners to California. Until the time the quarantine went into effect on the Arizona-California line on account of the hoof-and-mouth disease, travel was 26 per cent ahead of last year for the corresponding period. The quarantine was lifted the latter part of July. Due to the fact that once travel has been routed in other directions it takes considerable time for it to resume its normal channel, the effect was felt the entire season, and this, together with much uncalculated-for publicity given the forest-fire situation in California, also tended to further reduce the travel.

Despite these two conditions, which certainly reduced travel to a great degree, our travel for the past season has exceeded any preceding season, which demonstrates the greatly increasing popularity of Grand Canyon National Park.

The season was notable for the great increase in auto travel and is a forerunner of what Grand Canyon National Park may expect if approach roads are improved to such an extent that we may notify tourist agencies that approach roads can be traveled all year.

Travel to the Grand Canyon National Park for the travel season ending September 30, 1924, was as follows:

By automobile				By rail		Total
South rim		North rim		South rim	North rim	
Cars	Passengers	Cars	Passengers			
12, 013	38, 098	1, 039	3, 815	66, 236	107	108, 256

#### REVENUE FROM PERMITS, CONTRACTS, ETC.

Permits for studio, curio shop, grazing, etc.-----\$550  
 Contracts for hotels, camps, transportation, general store-----13, 400

#### WEATHER

Contrary to the general impression, the Grand Canyon has not a torrid or desert climate. The altitude being nearly 7,000 feet, combined with a southerly latitude, makes climatic conditions nearly ideal. The highest temperature during the year was 95° above, in June, and the lowest 8° below, once in December and again in January. However, the temperature seldom touches either extreme for any length of time, there being cool summer weather in summer and mild winter weather in winter.

Below are tables showing analysis of weather conditions:

Month	Mean	Mean	Mean	Precipitation	Snowfall	Number of days		
						Clear	Part cloudy	Cloudy
1923								
October.....	60	33	47	.36	-----	24	3	4
November.....	50	30	40	.78	-----	17	6	7
December.....	40	21	30	3.35	25	14	3	14
1924								
January.....	43	15	29	.18	2	28	2	1
February.....	53	24	38	.02	19	22	5	2
March.....	44	20	32	3.74	32	13	11	7
April.....	61	33	47	1.06	1	19	7	4
May.....	78	42	60	.37	-----	15	15	1
June.....	86	52	69	.00	-----	29	1	0
July.....	88	47	67	2.24	-----	18	4	9
August.....	89	43	66	.40	-----	13	14	4
September.....	77	49	63	2.06	-----	20	5	5
Total.....	769	409	588	14.56	79	232	76	58
Mean.....	64	34	49	-----	-----	-----	-----	-----

#### ROADS

Increased maintenance funds have made it possible to maintain our roads in a very satisfactory manner, weather conditions permitting. Our dirt roads can not be kept passable in wet weather but have been dragged after each rain. Several stretches of the Hermit Rim Road were rebuilt by contract last fall. During the past season approximately one-half mile of this road, which had greatly deteriorated, was rebuilt from our maintenance funds and chuck holes were patched throughout its entire length.

On the north rim a crude road was constructed to Point Sublime from our maintenance funds. This road was quite necessary in view of the grave fire hazard and the importance of being in a position to get fire-fighting crews and material to this section speedily. The Bureau of Entomology combating forest infestation found it necessary to construct a crude road to a point near Cape Royal. This road will also be very valuable in the event of fire in that area. Some light road-working equipment was purchased for the north rim and this greatly facilitates road maintenance in that section.

There is now available \$100,000 for the construction of trails in Grand Canyon National Park. This sum may, at the discretion of the Secretary of the Interior, be used to purchase the Bright Angel Trail, ownership of which rests in the county, provided the purchase price is expended on an approach road from the National Old Trails Highway. There is considerable opposition to this sale throughout the county, and at this date it can not be definitely stated whether or not the trail can be purchased. An all-year road from the National Old Trails Highway to the park is an absolute necessity, and we see no way of securing it other than by purchase of the Bright Angel Trail.

<sup>1</sup> Estimated.



If an all-year road could be constructed and were given due publicity in the East, it would greatly increase travel to Grand Canyon National Park.

A modern highway from the south rim to the north rim by way of Lees Ferry is also badly needed. The present road is so bad that few motorists are hardy enough to undertake the trip. If a motorist wishes to drive from the north rim to the south rim over an ordinarily good road, he must traverse parts of California, Nevada, and Utah providing he takes the nearest road to the west or parts of New Mexico, Colorado, and Utah if he takes the nearest road to the east. It is certain that if a modern highway were constructed by way of Lees Ferry the auto travel to Grand Canyon National Park would be greatly augmented and many people residing in southern Arizona would spend considerable time during the summer camping on the north rim.

#### TRAILS

The trails have been maintained in a satisfactory manner. A cloudburst in July necessitated the entire rebuilding of stretches of trails, but this was speedily done. Maintenance of the Dripping Springs Trail was resumed after a lapse of many years, and this trail can now be traveled with safety. It has proved very popular with visitors.

#### TELEPHONE LINES

During the past winter a telephone line was constructed across the Tonto Plateau from Hermit Camp to Indian Gardens. All telephone lines have been maintained in a satisfactory manner.

#### BUILDINGS

During the year a number of buildings have been erected. The Community Building, a long-felt want here, was completed June 30 and thrown open to the public July 3, when the dedication was held and a dance given. A new mess hall has been completed. There have also been erected three employees' cottages and one duplex cottage.

Funds are also available for the construction of a paint shop at administrative headquarters and two ranger cabins and barns in outlying parts of the park.

All permanent employees are now comfortably housed, and we can not foresee the need of much additional construction to house employees for some years to come.

After several years' study a comprehensive scheme for the development at Grand Canyon National Park has been adopted. This is perhaps the outstanding feature of the past year's work. We are now in position to designate building sites for the various utilities and Government activities with the assurance they will fit in the general scheme for all time to come, so far as it is possible to foresee developments.

#### WILD LIFE

Predatory animal hunters report that the deer are steadily increasing on the south rim. This section of the park, however, can never be a satisfactory game refuge until the grazing of cattle and sheep is no longer permitted and there has been considerable water development. It will also be necessary to extend the park boundary southward a considerable distance in order to adequately protect the wild life.

Deer are very numerous in the north rim section of the park. Many were observed soon after the ground was free of snow and they were invariably in excellent condition.

Due to the campaign waged against cats and dogs, squirrels, rabbits, and birds are becoming much more numerous and are quite tame.

Our predatory animal killer and rangers have accounted for 77 coyotes, 15 wild cats, 2 dogs, and about 15 house cats.

#### GRAZING

Park lands are greatly overgrazed, as are adjoining national forests. Drift fences should be built entirely around the park and grazing permits in the future refused.

Dr. Charles C. Adams, director of the Roosevelt Wild Life Experimental Station, spent considerable time in the park, and after looking over the situation on the south rim stated that, in his opinion, even if grazing were summarily stopped, it would require at least 50 years for the flowers, shrubbery, grass, etc., to come back to their normal condition.

#### FIRES

In spite of an unusually dry season forest fires have been infrequent. One fire on the north end of Powell Plateau, which started July 17, burned for a week before being put under control and destroyed approximately 1,600 acres of undergrowth, pinyon pine, and juniper. The big timber remained unscathed. There were six fires on the south rim, which were speedily extinguished with little damage.

#### VIOLATIONS OF REGULATIONS

During the year one man was arrested for having liquor in his possession and turned over to the Federal courts. He was fined \$100, but, not having the money, was confined in the Yavapai County jail to serve it out. One man was ordered out of the park, his presence here being undesirable. Another was fined \$75 for disorderly conduct. Three of the ranger force and the assistant superintendent have been appointed deputy sheriffs, which will, in view of the fact that jurisdiction has not been ceded, greatly aid in the enforcement of Federal laws.

Due to vigorous action by park rangers it is believed that there are practically no violations of the liquor laws in the park at present.

#### PUBLIC CAMP GROUNDS

Three public camp grounds have been maintained during the year, but the one at headquarters has been patronized to a greater extent than the other two, located at Grandview and Desert View.



All camp grounds have been kept in clean and sanitary condition and new toilets have been installed. A generous supply of firewood has always been available to campers.

#### LECTURES

Lectures on the Grand Canyon and vicinity, and the other national parks, have been given nightly at El Tovar Hotel by our Mr. I. I. Harrison. From October 1, 1923, to September 30, 1924, he addressed a total of 26,773 people. From February 3 to March 11, 1924, he was on regular leave of absence in the East, and while on leave gave 22 lectures to a total attendance of 16,330 people.

#### GIFTS

During the year, we received from the Mountain Lakes (N. J.) Free Public Library, through the efforts of Mrs. Pearl H. Doremus, 515 books for our library. Gifts of books were also received from Mr. J. J. Jolly, Mrs. A. L. Stetson, Mrs. John O'Shea, Miss L. A. Turner, Mrs. Frances L. Jones, Mrs. Bauman Elder, and Miss C. A. Avery.

#### DEPARTMENT OF AGRICULTURE—FOREST SERVICE

During the past season especially cordial cooperative relations have existed between Grand Canyon National Park and the Tusayan and Kaibab National Forests in Coconino County. We have spotted a number of fires in both these forests and reported them to the supervisor's office before they had been located by Forest Service men. During the fire on Powell Plateau in July, we were given much help by the Forest Service.

#### DEPARTMENT OF THE INTERIOR—GEOLOGICAL SURVEY

We have received advance prints of topographic maps prepared by R. T. Evans, topographic engineer of the United States Geological Survey during the summer of 1923. Thanks to Mr. Evans's painstaking work, we have now an accurate map of the entire park.

The gaging station on the Colorado River at the mouth of Bright Angel Creek was in operation the entire year. The gager telephones the park office his gage readings daily, and the information is gotten out immediately to all concerned. This arrangement is credited with saving the Reclamation Service a large sum of money on the lower part of the river, due to advance flood warnings sent from this place.

#### ACCIDENTS

There were no serious accidents in the park during the past season. This speaks very highly for the excellent manner in which the transportation over roads and trails is conducted by our operators.

#### FOREST INSECT INFESTATION

The Bureau of Entomology has been vigorously combating the forest insect infestation on the north rim. Approximately 4,500 trees were cut and peeled and it is believed that this infestation has been practically eliminated.

#### NECESSARY ADDITIONS TO THE PARK

When Grand Canyon National Park was created there was much opposition from mining and grazing interests and the boundaries of the park were a compromise. Experience has proven that if we are to protect our game on the south rim the park line must be extended considerably toward the south.

Due to many canyons breaking back from the rim, it is impossible to develop a park system on the north rim in such a way as to keep the roads entirely within the park. In order to plan a self-contained and logical development program in this section there should be an addition to the park northward.

#### RECOMMENDATIONS

*Sewage-disposal plant.*—The sewage-disposal plant in use at present was constructed about 19 years ago and was no doubt adequate at that time. Since then the number of visitors has increased manifold and the septic tank is greatly overloaded and is unsanitary. Mr. H. B. Hommon, of the United States Public Health Service, has designed an adequate disposal plant and funds should be secured for its construction as soon as possible. The new septic tank will be located approximately 1 mile from all activities instead of in the midst of them as is the tank now in use.

*Trails.*—The Kaibab Trail is the only means of cross-canyon travel, and from the standpoint of service to visitors and administration of the park it is imperative that we have a first-call trail from the south to the north rim. At present the worst section of the trail is for about 3.5 miles above Phantom Ranch. For this distance the trail must be taken out of the creek bed and made safe for travel during rain storms, which may occur at any time during the summer. Other stretches of the Kaibab Trail should be relocated and the lower end of the Hermit Trail should be relocated so as to shorten the trail and reduce the large annual maintenance charges.

*Roads.*—Funds should be secured to reconstruct existing roads and construct new roads to points of interest in the park. There are 7.5 miles only of all-year roads in the park. The remaining roads are impassable during the winter and frequently impassable during the rainy season in summer.

*Buildings.*—The park has two buildings only on the north rim. One was an old hunter's cabin and the other a forest ranger's cabin. Neither were constructed for winter occupation and both have deteriorated to a point that they must be replaced. We must have a comfortable ranger cabin, storehouse, barn, and machinery shed on

the north rim. Three snowshoe patrol cabins must be constructed. A ranger cabin with barn and storehouse must be built at Cottonwood Flats at the half-way point between the south and north rims.

In the comprehensive scheme for development at Grand Canyon, the site of the cabin now occupied by the superintendent will be turned over to the utilities serving visitors. A new superintendent's residence must be built in the park-service area.

The site now occupied by the administration building will also be turned over to the utilities. A new and adequate administration building must be constructed at the new community center.

Rangers' cabins should be located at strategic positions in outlying sections of the park.

A powder magazine for the safe-keeping of explosives must also be constructed.

Other buildings badly needed are a hospital and museum. It is doubtful if any national park could get together a greater variety of exhibits properly belonging to the region in which it is located.

**Telephone lines.**—Telephone lines should be built to all outlying sections of the park as a convenience to visitors and to the administration of the park, and as a protection from fire.

**Water-supply system.**—A water-supply system should be provided for Bright Angel Point on the north rim.

**Fences.**—Many miles of drift fences should be constructed in order to control grazing.

**Nature service.**—A park naturalist with all-year residence in the park should be appointed.

**Private lands.**—The elimination of privately owned land in the park by purchase is urgently recommended.

**United States commissioner.**—A resident United States commissioner with power to assess fines and impose prison sentences for misdemeanors should be appointed.

**Deputy United States marshals.**—In order to properly enforce laws a number of rangers should be appointed deputy United States marshals.

## LAFAYETTE NATIONAL PARK

GEORGE B. DORR, Superintendent, Bar Harbor, Me.

### GENERAL STATEMENT

The past year has seen marked development in Lafayette National Park and advance towards its goal of public service. The old summer life of the region is rapidly giving place to a new one springing from the vast increase in motor travel the whole country over and the greater movement of people.

Out of the immediate vicinity of cities and off main lines of summer tourist travel, those who come motor-camping to the national park are of an exceptional class, interested in the beauty of its grand coastal scenery, in the history of the region from its early days of French possession and colonial settlement, and interested in its nature, its bird life, its plant life, its ancient geological story, the prolific marine life in the ocean waters that surround it.

They come in great numbers, too, causing embarrassment to provide for them in the absence as yet of any proper camping ground within the park, the establishment of which forms one of its most immediate and greatest needs.

### ROAD CONSTRUCTION

The most striking feature in the park's development during the past year has been the progress made upon the construction of its first motor road, which is being built by generous contribution along the lines of a survey approved in 1922 by the Secretary of the Interior and the National Park Service.

The views this road is opening up are of unique and marvelous beauty. Built to endure, with solid rock foundation, it should remain as permanent a feature as the mountains in the regional landscape and become famous among motorists and travelers the country over. It is in every sense a park road, built for beauty; far from bringing any discordant element into the native landscape, it will open its interest and its wild charm to countless visitors.

### ROAD HEARING DECISION

An attack made last winter by a group of the island's summer residents and visitors on the continued construction of this road and of an associated road system in the park for use with horses led to a hearing before the Secretary of the Interior in March, at Washington, and in the outcome proved of marked advantage in leading the Secretary to make, in the early summer, a personal inspection of the park and examination of its road-building program, and in leading to a visit also from Director Mather, who met the Secretary at Bar Harbor. Every opportunity, both at the hearing in Washington and during the visit to Bar Harbor, was given those in opposition to express their views, and the whole matter of road construction in the park was thoroughly reviewed. The Secretary, after conference with Director Mather, approved both the roads under construction.

### VISITS OF DIRECTOR MATHER AND LANDSCAPE ENGINEER

Director Mather, personally inspecting the work done and being done, approved it warmly and expressed his desire at some future time to have the engineers in charge of road construction in the western parks meet at Bar Harbor and examine it.

Previous to the director's visit the superintendent had a visit from Mr. Daniel R. Hull, chief landscape engineer of the National Park Service, who spent a few days in going



over the new road construction and getting a first impression of the natural features of the park. His visit was fruitful in suggestions made and the opportunity for discussion, an opportunity which comes too rarely to this eastern park.

#### PUBLICITY

A further benefit which has resulted from the frank and full discussion of road building in the park is the widespread interest it has aroused in Maine and the better understanding it has brought about of national park benefits and aims. With remarkable unanimity the whole State has put itself behind the approved projects of the National Park Service. No paid publicity could have accomplished the good work which this discussion did unsought.

An excellent comprehensive study of the park, prepared by Mr. Robert Sterling Yard, was issued this spring by the National Parks Association and reprinted for distribution in a large edition by the town of Bar Harbor has been widely sought.

#### BIOLOGIC RESEARCH

Great progress has been made during the past year in the biologic study of the region. The Mount Desert Island Biological Laboratory, started tentatively as a station for summer work three years since by a group of distinguished scientists from leading universities and museums, is now permanently established and incorporated under that name in a singularly attractive site which has been deeded to it on the island's northern shore, with a subsidiary station at Otter Creek upon the ocean front.

The University of Maine, whose president, Dr. Clarence C. Little, is a biologist of note, established this summer on land conveyed to it adjoining the park, in the vicinity of Bar Harbor, a summer school of biology, whose students, under Doctor Little's guidance, have already made most interesting studies in the park's animal and insect life.

A list of the birds nesting and visiting the island this season has been compiled by a competent observer whose services were offered voluntarily, and a descriptive list of the more interesting wild flowers, ferns, and other native plants is being prepared for the park by Dr. Edgar T. Wherry, of Washington, president of the Washington Wild Flower Society, who has also made an examination of park soils with reference to replantings in its fire-devastated areas.

#### MUSEUM EXHIBITS

Great interest is being taken in the establishment of museums in connection with the park. Dr. Robert Abbe, of New York, to whom the park already owes much, is deeply interested in the establishment of a museum exhibiting the numerous Indian implements of stone, bone, or horn, and fragments of pottery which have been found in this region on the site of former Indian settlements, abundant along the shore; and an exhibit of such nature and extraordinary interest, gathered and arranged by him, is now being made in the art room of the Jesup Memorial Library at Bar Harbor.

Material for a museum of different character, exhibiting historical papers of every kind connected with the settlement of the region and the past history of the island is being collected with rare enthusiasm by Prof. William Otis Sawtelle, of Haverford, Pa., who has already formed a remarkable collection worthy of permanent museum exhibit.

#### FIRES

No forest fires have been allowed to get headway within the park, owing to the watchfulness of its ranger service, though a number have started. Outside the park and in one case seriously threatening woods of exceptional beauty within its bounds fires caused by berry pickers in slash left after lumbering have swept dangerously but been ultimately extinguished, at large expenditure, before spreading to do serious damage.

#### TRAVEL

Motor travel to the park is steadily increasing. In the absence of motor roads within the park and special entrances an accurate count is not possible, but close estimate can be made and by it a total of 71,758 people had visited the park this season by September 30, showing a substantial advance over last year. This number will undoubtedly increase rapidly with the building of the new motor road projected by the Government.

#### ZION NATIONAL PARK

WALTER RUESCH, Acting Superintendent, Springdale, Utah

Zion National Park was created by act of Congress November 19, 1919. A portion of the area was originally set aside as a national monument by presidential proclamation July 31, 1909, under the name "Mukuntuweap." The monument was enlarged by presidential proclamation March 18, 1918, and named "Zion," the name given the canyon by the earliest settlers. The park contains approximately 120 square miles, or 76,800 acres, and is located in the extreme southern part of Utah. It is reached by motor stage from Cedar City, the nearest rail connection, and by private motor over the Arrowhead Trail, an all-year route between Salt Lake City and Los Angeles.

#### ADMINISTRATION

The administration and protection of the park is in charge of the acting superintendent, who is assisted by a clerk and two rangers.

#### WEATHER CONDITIONS

The weather has been mild and unusually dry and the precipitation much lighter than in recent years. Due to this condition all vegetation suffered for want of moisture.



All trees, except those in the immediate vicinity of streams, are shedding, and the underbrush has a brown appearance. Many of the springs on both the east and west rims have completely vanished. In consequence the grazing in that vicinity has suffered for want of both water and grass.

#### ROADS WITHIN THE PARK

The road from the entrance to the public camp has been reconstructed and has been used all the season. From the public camp to Cable Mountain, a distance of  $1\frac{1}{2}$  miles, the road has been completed and from this point to The Narrows is now under construction and will be completed for the 1925 season, making  $7\frac{1}{2}$  miles of good surfaced road within the park. Five new bridges have been constructed on the road from the entrance to Cable Mountain. The bridge at Rockville, which spans the Virgin River and makes the Zion Park and North Rim of Grand Canyon Cut-off Road possible, is nearing completion.

#### APPROACH ROADS

On account of the long drought the roads leading to the park have given cause for much complaint. However, with the completion of the road from Cedar City on the north to La Verkin on the south, which is now under contract, much of the poor roads will be eliminated. For next season's travel the road leading from the new bridge at Rockville, shortening the distance from Zion Park to the north rim of the Grand Canyon some 30 miles, will be constructed, thus eliminating two heavy grades and the necessity of retracing a distance of 25 miles. The Utah and Southern California automobile associations have placed metal signs along the highways leading to the park, making it possible to travel without a log or guide book.

#### TRAILS

All trails have been maintained and are in good condition. Three new trails have been constructed during the winter and spring of 1924, namely, Lady Mountain Trail (footpath), 2 miles in length, which has over 1,400 steps chiseled out of the rock, 2 ladders, and 2,000 feet of hand cable; West Rim Trail,  $4\frac{1}{2}$  miles in length, with a 9-mile loop on rim; and Highline Trail, leading from Zion Camp to the Grotto and skirting the base of the canyon walls the entire distance,  $1\frac{1}{2}$  miles. The East Rim Trail has been rebuilt in a number of places during the year. All trails have been extensively used, but the West Rim Trail has proven the most popular.

#### BUILDINGS

The Utah Parks Co. have material already on the ground for the construction of a number of cottages, construction of which will begin in the very near future. Plans for their central camp building have been made and approved by the National Park Service.

#### PUBLIC CAMP GROUND

The camp ground was enlarged and provided with garbage cans, water taps, and fuel in the early spring; also two shower baths were constructed. The increased travel has found the present sanitation system inadequate, and with the outlook for an enormous increase during the 1925 season more modern sanitary equipment should be provided.

#### WILD ANIMAL AND BIRD LIFE IN PARK

The deer in the park have greatly increased and have become so tame that they are seen and photographed by the tourists. Many birds were seen in the park in the spring and early summer. Later in the season they disappeared, except the robin, blue jay, several species of woodpeckers, and rock wrens.

#### INSECTS AND PLANT PESTS

Due to the interest of Prof. Vasco M. Tanner, of the Dixie College, the pests have been under better control than ever before, and with adequate funds there would be little or no destruction from this source.

#### GRAZING

The number of cattle grazing in the park was reduced owing to lack of feed and water shortage caused by the long drought. Stock will have to be taken off at an earlier date than usual because of their weakened condition.

#### RECOMMENDATIONS

At present there are no Government housings for employees, and these are greatly needed in order that administration can more effectually be carried out. The lack of adequate shelter for equipment and machinery causes considerable waste by loss and deterioration. During the drought of the summer months the need of a sprinkling wagon for the proper maintenance of the roads was demonstrated.

#### TRAVEL

It is very gratifying to note that the travel has greatly increased over any preceding year. Many notable visitors have been in the park this season and a number of college classes have made it their study room. Many beautiful paintings have been made by renowned artists who have spent the summer in the park.

## Annual travel report 1924

State and country	Visitors			
	Number of cars	By private automobiles	By stage	Miscellaneous ways
Arizona.....	23	61	3	
Arkansas.....	2	5		
California.....	266	750	88	4
Connecticut.....	6	13	4	
Colorado.....	32	81		
Georgia.....	1	3		
Idaho.....	23	90	5	
Iowa.....	6	14	6	
Illinois.....	14	72	39	2
Indiana.....	3	7		
Kansas.....	7	15		
Kentucky.....			2	
Louisiana.....	3	7		
Montana.....	7	23	2	
Michigan.....	14	49	2	
Missouri.....	6	19	2	
Minnesota.....	7	17		1
Maine.....	1	2		
Massachusetts.....	4	7	8	
Maryland.....	1	6		
New York.....	13	33	14	8
North Dakota.....	2	5	2	
Nevada.....	35	112		
New Mexico.....	1	2		
New Jersey.....	1	1	4	2
New Hampshire.....			1	
Nebraska.....	12	46	20	
Ohio.....	14	46	6	
Oregon.....	11	26		
Oklahoma.....	2	4		
Pennsylvania.....	7	22	12	
South Dakota.....	1	1	1	
Texas.....	3	7	1	
Tennessee.....	2	8	2	
Utah.....	1,422	5,884	90	495
Washington.....	9	31	2	
Wyoming.....	15	46	3	
Wisconsin.....	8	16	2	
West Virginia.....	2	7		
District of Columbia.....	3	5	1	
Mexico.....	1	2		
Porto Rico.....			1	
Hawaii.....			2	
Canada.....	2	3		
Isle of Malta.....			1	
Alaska.....	1	2		
Australia.....			1	
South Africa.....			4	
Japan.....			6	
Total.....	1,993	7,551	337	512

Total number of visitors 1924..... 8,400  
 Total number of visitors 1923..... 6,408

Increase..... 1,992

Per cent of increase..... 31

## THE SOUTHWESTERN MONUMENTS

FRANK PINKLEY, Superintendent, Blackwater, Ariz.

By order of the director, given at the Yellowstone conference in October, 1923, I was put in charge of the national monuments of the southwest. The change was made with the idea of unifying the monument work and passing the problems from the various monuments up to a local man who would be in touch with the local conditions, thus relieving the already overcrowded Washington office of some work which could be better understood and more economically handled from a field headquarters.

As a result of the creation of the new position, we custodians of the southwest are losing the old feeling of isolation and are developing a team spirit which, I believe, is very much for the good of the service.

The reports from the various monuments in this district follow:

*Aztec Ruin National Monument* is located in northwestern New Mexico near the Colorado-New Mexico line. Mr. Earl Morris is the custodian at a nominal salary. Mr. Morris was given a leave of absence during the year to supervise excavations in Central



America and Mr. P. T. Hudson, through funds furnished by the American Museum of Natural History, was retained at the monument as ranger in charge.

This monument was reserved to protect the ruin of the 500-room communal house of the well-known pueblo type which exists within its boundaries. Owing to a lack of funds no restoration or protection work could be done during the year. Further excavation is not needed. I have asked for an allotment for repairs during the fiscal year 1925 and included the salary of a custodian in the estimates for 1926.

*Capulin Mountain National Monument*, in northeastern New Mexico was, during the past year, under the charge of Custodian Homer J. Farr, who is being paid a nominal salary and resides 3 miles from the monument in the town of Capulin. The reservation was made to protect the magnificent example of a recently extinct volcano which rises about 8,000 feet above the sea level and stands about 1,500 feet above the general level of the surrounding plain.

No expenditures were made at Capulin Mountain during the year, but estimates have been passed for the building of a road if the local or State authorities will build and maintain an equally good road up to the monument boundary.

*Carlsbad Cave National Monument*, in southeastern New Mexico, is one of the recent additions to our monument system and promises to be of great interest.

The cavern has not yet been fully explored, but is thought to be one of the largest in the world and to contain some of the finest formations. Through funds furnished by the National Geographic Society a complete survey and exploration is being made of the cavern and the surrounding mountains, the party doing the work being under the charge of Dr. Willis T. Lee, of the United States Geological Survey. Dr. Lee acted as temporary custodian while the survey was being made. I have included a salary for a custodian in the estimates of 1926.

Under a special item of \$5,000 which has been appropriated for the purpose it is hoped the cavern will be opened up for visitors during the next year.

*Casa Grande National Monument*, in south-central Arizona, has been my headquarters during the year. The prehistoric ruins which cover this monument are notable as being the last standing ruins of their type in the United States.

Because of our limited funds no excavation, repair, or restoration could be attempted during the year. Repair and restoration work is planned during the coming winter months. During the past year the regular administration work and the reception of visitors and explaining the ruins has been carried on. A helper was needed part of the time, and we have provided for a full-time assistant next year.

*Chaco Canyon National Monument*, in northwestern New Mexico, is under the charge of Mr. A. C. Griffin, who receives a nominal salary.

As examples of prehistoric architectural skill the Chaco Canyon ruins are without equal in the whole United States. The ruin of Pueblo Bonito alone had between 700 and 1,000 rooms and has walls standing at present to a height of nearly 48 feet.

The National Geographic Society Pueblo Bonito Expedition under the direction of Doctor Judd has spent three years in the exploration of Pueblo Bonito ruin and contemplates two years of further exploration. This work will entail a large amount of restoration work on the part of the service which we plan to start during the fiscal year 1925. The publication of Doctor Judd's report upon the completion of his work will arouse a nation-wide interest in this monument, and I have included a salary for a full-time custodian in the estimates of 1926.

*El Morro National Monument* lies 52 miles southeast of Gallup in northeastern New Mexico and is under the charge of Mr. E. Z. Vogt, of Ramah, N. Mex.

On the smooth face of the sandstone cliff of El Morro are the inscriptions of five of the early Spanish governors of New Mexico, as well as of many intrepid padres and soldiers who were among the first Europeans to visit this part of the world. Only a few dollars were expended on the monument during the year in repairing the trail, bridge, and fence. Further protection for the inscriptions is planned for 1925.

*Gran Quivira National Monument* in central New Mexico, under charge of Custodian W. H. Smith, is of special interest because its ruins lap from the prehistoric down into the historic period. The pueblo ruins now on this monument were inhabited long before the coming of the Spaniards, and the two mission churches were erected one in 1628-1630 and the other after 1650. The place was abandoned before the uprising of 1680. In cooperation with the American School of Archeology, of Santa Fe, N. Mex., we fenced the portion of the monument covered by the ruins and excavated part of the pueblo and the later church in the summer of 1923.

*Montezuma Castle National Monument*, lying in central Arizona, under charge of Custodian Martin L. Jackson, of Camp Verde, is the most easily accessible cliff dwelling in a good state of preservation in the Southwest. Some repair work was done on the castle in the summers of 1923 and 1924. Mr. Jackson is paid a nominal salary and is rendering excellent service, but by the summer of 1926 the castle will have a large number of visitors and a resident custodian will be necessary.

*The Natural Bridges National Monument* is in southern Utah under charge of Custodian Zeke Johnson. This monument is reached by trail only and lack of funds has prevented any improvement of the trail. No money was expended at the monument during the past year.

*The Navajo National Monument*, in northern Arizona, is under the charge of Custodian John Wetherill and the three fine cliff dwellings on the monument form a most interesting exhibit. This monument has not yet come into its own, being so far back from the regular lines of travel, but a great increase of visitors is to be expected in the next two or three years, and protection in the way of a summer custodian should be planned for by 1928. Mr. Wetherill is receiving only a nominal salary and can not afford to give the time that will be needed for protection when the number of visitors increases.

*The Papago Saguaro National Monument*, located in southern Arizona, is under the charge of Custodian J. E. McClain, who receives a nominal salary. Here we have reserved a typical section of desert scenery which forms a wonderful contrast with the waving alfalfa fields and beautiful orange groves of the reclaimed desert which surrounds it under the Roosevelt irrigation project.

*The Petrified Forest National Monument*, in northern Arizona, is under the charge of Custodian William Nelson, who is the only full-time man at work among the Southwestern Monuments aside from myself.



Mr. Nelson has erected a museum building during the past year and is gathering a collection of the most beautiful and interesting examples of the petrified wood which covers hundreds of acres of his monument. Mr. Nelson has also been able to add a great service to his visitors this year in a series of free lantern-slide lectures which he gives at night after a hard day's work in the field. A camp ground and water supply was developed during the winter and spring months so visitors could spend the night on the monument and, by making a two-day visit, get a much better appreciation of the world's best petrified forest.

Mr. Nelson's greatest need is ranger help to protect his monument from vandals and souvenir hunters.

*Pipe Spring National Monument*, in northwestern Arizona, has no custodian, due to a lack of funds. This monument, which is replete with the early history of the white settlement of the southwest, needs repair and restoration work on the stone buildings and a general cleaning up of fencing, cattle corrals, etc., which have been allowed to deface the landscape. Some of this work has been planned for the coming year.

*Rainbow Bridge National Monument*, in southern Utah, the largest natural bridge in the world, has no custodian, and none is really necessary yet. It is reached only by trail with a pack outfit, and no money has been expended on the monument.

*Tumacacori National Monument*, in southern Arizona, again touches the mission period in the history of the southwest. This mission was first visited by Padre Kino in 1691, and the present walls were erected about 1800. It is one of the most charming and interesting of the ruined missions in the United States.

An appropriation granted by the legislature of the State of Arizona, amounting to \$1,000, was expended during the fall and winter of 1923, and \$150 of Park Service funds were expended in the spring of 1924. This money was used in cleaning up and fencing the grounds, changing some unsightly fencing, repairing and restoring walls, installing a windmill, tank, and water system, and in various minor repairs. The property is under my charge, and no resident custodian is carried on the roll, although a partly paid custodian is badly needed.

The number of visitors at the various southwestern monuments during the past season has been as follows:

<b>New Mexico:</b>		<b>Arizona—Continued.</b>	
Aztec Ruin .....	5,968	Papago Saguaro .....	10,000
Capulin Mountain .....	7,000	Petrified Forest .....	42,781
Carlsbad Cave .....	1,280	Tumacacori .....	8,800
El Morro .....	3,200	<b>Utah:</b>	
<b>Arizona:</b>		Natural Bridges .....	62
Casa Grande .....	9,583	Rainbow Bridge .....	115
Montezuma Castle .....	7,500	Total .....	96,289

#### MUIR WOODS NATIONAL MONUMENT

JOHN T. NEEDHAM, Custodian, Mill Valley, Calif.

The Muir Woods National Monument is situated 3 miles west of Mill Valley, Marin County, Calif. It is reached from San Francisco in a little over an hour's ride by ferry and electric train, connecting at Mill Valley with the Mount Tamalpais & Muir Woods Railway, which deposits the visitor at Muir Inn, on the northern boundary of the reservation. It can also be reached over the automobile road from Mill Valley, a distance of 4 miles, as well as by several trails.

Muir Woods, so named in honor of the celebrated naturalist, John Muir, was created a national monument by presidential proclamation of January 9, 1908, by the late President Theodore Roosevelt. The original grant, containing 295 acres of land, was presented to the Government by William Kent, of Kentfield, Calif., who subsequently, in September, 1921, gave an additional 78 acres, which, with 50 acres donated by the Mount Tamalpais & Muir Woods Railway at the same time, makes its present area 423 acres. It was set aside in this manner to preserve for all time its virgin stand of the coast redwood (*Sequoia sempervirens*).

The monument is administered by a resident custodian, assisted on Sundays and holidays by two deputies, except during the four winter months. Laborers are employed from time to time to help put in improvements and clean up the grove after large gatherings during the height of the season.

It is imperative that the present boundary of the monument be extended 150 or 200 yards to the south to give adequate automobile parking ground on the reservation. This land is now used for this purpose through the kindness of the owner, but if for any reason the privilege ever be stopped there would be no suitable parking area whatever available. This extension would also include a picturesque grove of bay trees between the road and the stream.

Muir Woods is situated in the heart of a game sanctuary of several thousand acres extending from the Golden Gate on the south to Bolinas Bay on the north, and consequently wild life of all kinds is abundant. The deer in particular are very numerous and tame and are frequently observed by the visitors. The past February witnessed a remarkable run of steelhead trout in the creek.

Visitors to the monument from October 1, 1923, to September 30, 1924, inclusive, totaled 92,391.

#### PINNACLES NATIONAL MONUMENT

San Benito County, Calif.

The Pinnacles National Monument is centrally located in San Benito County, 36½ miles south of Hollister and 35½ miles north of King City, Monterey County. Both roads from these cities lead to the Bear Gulch entrance to the monument, which is the only logical and convenient entrance for the public. The Pinnacles was set aside as a national monument by presidential proclamation January 16, 1908, of a total of 2,080 acres. May 7, 1923, a second proclamation was made embracing some vacant land

adjacent to the monument that contained some underlying caves and grottoes as well as some fine camping grounds with plenty of spring water, bringing the area up to 2,653.46 acres. July 2, 1924, a third proclamation was made, giving a total area of 2,980.26 acres.

This is the second season that tourists have been able to visit the monument since it has been created, as there had been no trails established or any efforts made to open up a passage. All visits in this locality prior to April, 1922, have been made to some privately owned land adjacent to the northwest corner of the monument. This condition was a big factor in holding up the development of the natural entrance to the monument.

The Pinnacles National Monument is composed of spirelike rocks that rise from 600 to over 1,000 feet and can be seen for many miles. There are caves, caverns, and grottoes underlying one another; these have been formed by huge masses of the rock falling into the canyons, leaving passages underneath where one can spend many hours in pleasant explorations. The formation is of volcanic nature, not of the lava form, but of an upheaval due to a terrific heat below the earth's crust. There are many different colored mosses that grow on the rocks that lend a very beautiful color effect to the canyon walls and spires. Trees, shrubs, and an abundance of wild flowers thrive among the rocks.

An allotment of \$600 was made for the building of needed trails in the monument, and 9,725 feet of dug trail and 27,245 feet of brushed trail were constructed. Several small springs were found along the trail on which some development work was done, making them available for drinking purposes.

The construction of a good trail connecting the approach road with the monument trails made a strong impression on the county and its several organizations and emphasized the necessity of having a good road into the monument. The San Benito County Farm Bureau, led by Mr. W. I. Hawkins and Mr. Waldo Rohnert, raised \$2,000 to start a road through Bear Gulch following the new trail. When this is completed visitors will be able to drive into the monument by automobile. The county supervisors then bought the right of way on the approach road, which was formerly a private road with five gates which had to be kept closed. The road will be widened and the gates will come off, cattle guards being installed in their place. By next May unhindered entrance will be available.

V. A. Petersen, whose property adjoins the monument, has opened a free camp ground at the mouth of Bear Gulch for the convenience of visitors. Furnishing wood and water gratis, Mr. Petersen is doing all that is possible to cooperate with the custodian in order to make visitation possible. Since this new camp has been installed travel has been very heavy.

The Pinnacles Monument was visited by 8,973 people during the year.

## REPORT OF THE CIVIL ENGINEERING DIVISION

GEORGE E. GOODWIN, Chief Civil Engineer

As during the previous year, the efforts of the engineering division for the past year have been applied on many miscellaneous and incidental features of park work, which, although very essential, are but little apparent either in administrative or technical records or in the actual accomplishment of physical improvements.

### ROAD CONSTRUCTION, FIELD SURVEYS, ETC.

Some of the physical field work accomplishments of the year have consisted of the construction by hired labor of about 2 miles of The Generals Highway between Hospital Rock and Giant Forest in Sequoia Park, and the following work done by contract forces: The completion of about 4 miles of the Transmountain Highway on the west side of Glacier National Park and the partial construction of about 8 miles of the Transmountain Highway on the east side of Glacier Park; the completion of about 2 miles of the Carbon River Extension Road in Mount Rainier National Park; the construction of a 180-foot, double-travel width, suspension bridge across the Nisqually River in Rainier National Park; the construction and reconstruction of about 6 miles of road in Zion National Park and the construction of abutments preparatory to the erection of a 200-foot steel bridge across the Virgin River for Zion National Park. The necessary field location and construction surveys have been made in connection with the above work and in addition there have also been over 60 miles of preliminary road location surveys made in Lassen Volcanic National Park; about 6 miles of final location and construction surveys have been made in Glacier National Park for the next unit of the Transmountain Road, and various other miscellaneous surveys have been made for structures, service roads, camp-ground roads, etc., in the different parks.

### PLANS, ESTIMATES, REPORTS, ETC.

Incidental to the above work, plans and estimates have been made and specifications prepared, and for the contract work proposals have been circularized and bids received and specifications and contracts prepared. Examinations and reports have been made on a number of different minor projects and miscellaneous features of work. Standard road signs have been procured for the different national parks and surplus war materials available for transfer have been circularized. General and technical studies have been made of different matters and advisory reports submitted thereon. In addition to the above enumerated work there has been the usual supervisory work in connection with the field technical and contract forces and the general administrative work incidental to the activities of the engineering division.

## REPORT OF THE LANDSCAPE ENGINEERING DIVISION, 1924

DANIEL R. HULL, Landscape Engineer

The work of the landscape engineering division has been increased from year to year until the season just closed made necessary more than ever extensive studies of the situation in the field. With headquarters in Los Angeles, where we have contact with



the best architectural and engineering talent, plans have been prepared for many park projects.

Crater Lake has completed the hotel wing which was started last season, and several new Government buildings have been added for convenience of the public, one near the rim automobile camp, a community house for use of the public.

Sequoia has added materially to its automobile camp in the way of public-comfort stations and driveways.

Grand Canyon has provided additional buildings in the Government industrial area, and also additional quarters for employees. The general plan for the future development of the El Tovar area, including community center and automobile camp, has recently been approved by Government, Santa Fe, and Harvey officials. It is expected that long delayed improvements will result. The new community building planned by this office is now serving the local residents as well as the tourist.

Glacier has added several buildings to the industrial group plans which were prepared last year. A study of road conditions was made which has resulted in certain changes in future road programs with an idea of better landscape protection.

Hot Springs was visited early in May and a layout has been prepared for the area formerly occupied by the Arlington Hotel. Several shelters and public camp improvements were also planned.

Mesa Verde has added several structures to the plot plan which was prepared by the landscape division.

Mount Rainier has made automobile camp additions, also built residences for Government employees from plans prepared by this office.

Rocky Mountain's buildings and other improvements planned by this division during the past season should aid greatly in improving service to the public. Several log structures have been built which have attracted much favorable comment.

Yellowstone has continued the automobile camp extensions, also added several structures, among which is the much-used western entrance checking station. Hotel and camp operators have also made improvements along lines designated by the landscape division.

Yosemite has at present under construction the new village, and it is expected that with the beginning of another season little will be left where the old headquarters now stand. The buildings at Tuolumne Meadows have been constructed from plans outlined by this office and also the new checking station at Bridal Veil Falls.

Zion Park has an approved layout for a camp development which the Union Pacific Railroad expects to have in operation for next season. Bridge and road improvements have been made here also.

Wind Cave was visited this season for the first time by a representative of the landscape division, and the area above and below ground fully covered. It is hoped that funds will be available for developing a proper layout for the Wind Cave area.

Lafayette Park was visited for the first time also, and a study made of the varied interests it offers. Suggestions were made for roadways which are to be built across park lands and thought given to future requirements.

## REPORT OF THE ACTIVITIES OF UNITED STATES PUBLIC HEALTH SERVICE IN CONNECTION WITH SANITATION OF NATIONAL PARKS

H. B. HOMMON, Sanitary Engineer, U. S. P. H. S.

It is a pleasure to record the splendid progress made in the last three years in improving sanitation in national parks. The water supplies of the parks visited, with but very few exceptions, now meet the United States Treasury standard for purity of waters used on interstate carriers; rapid progress is being made in the installation of sewerage systems, modern treatment tanks, and sterilization plants; more satisfactory methods of garbage disposal are being worked out; general orderliness and cleanliness, which from the beginning were of a high order in hotels, camps, and other places handling foods and soft drinks, have been developed to an even higher degree; and mosquito-control work is being carried out effectively.

These results have been possible only through the active and efficient cooperation of the superintendents and a willingness on the part of the operators to carry out recommendations. With an increasing number of visitors going to the parks each year, however, it will require constant vigilance and continued effort on the part of all interests in the parks to maintain the high standards already reached, and to advance them still further as more money is appropriated for sanitary improvements.

On account of the short park season, the large number of parks, and the great distances between them, and the wide expanse of territory to be covered in the parks, and the fact that there is no way of knowing what parks will receive appropriations each year for sanitation or what operators will want to construct new hotels, camps, etc., it has not been possible to get out plans for sewerage systems and treatment plants and plans for other work of a sanitary nature in advance of the opening of each season. It would seem that better and more prompt results could be obtained if each year it were decided to concentrate efforts on securing appropriations for the sanitary work most needed in a definite number of parks, and to require operators to submit plans at least six months in advance of the time construction work is to begin. Such a plan of procedure would indicate what work would likely be carried out during the year, and plans could be prepared in advance of the time when construction is expected to start.

No attempt has been made in this report to summarize the sanitary work in the individual parks, as this information will appear in the reports of the various superintendents.



## APPENDIX D

### LEGISLATION

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### LEGISLATION

[PUBLIC--No. 70--68TH CONGRESS]

[H. R. 3682]

An Act Authorizing the construction, reconstruction, and improvement of roads and trails, inclusive of necessary bridges, in the national parks and monuments under the jurisdiction of the Department of the Interior

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That the Secretary of the Interior, in his administration of the National Park Service, is hereby authorized to construct, reconstruct, and improve roads and trails, inclusive of necessary bridges, in the national parks and monuments under the jurisdiction of the Department of the Interior.

SEC. 2. That for such purposes, including the making of necessary surveys and plans, there is hereby authorized to be appropriated, out of any moneys in the Treasury not otherwise appropriated, the following sums, to be available until expended: The sum of \$2,500,000 for the fiscal years ending June 30, 1924, and June 30, 1925; the sum of \$2,500,000 for the fiscal year ending June 30, 1926; and the sum of \$2,500,000 for the fiscal year ending June 30, 1927.

SEC. 3. That the Secretary of Agriculture is authorized to reserve from distribution to the several States, in addition to the 10 per centum authorized by section 5 of the Act of November 10, 1921 (Forty-second Statutes at Large, page 213), not exceeding 5 per centum of the material, equipment, and supplies hereafter received from the Secretary of War, and to transfer said material, equipment, and supplies to the Secretary of the Interior for use in constructing, reconstructing, improving, and maintaining roads and trails in the national parks and monuments: *Provided*, That no charge shall be made for such transfer except such sums as may be agreed upon as being reasonable charges for freight, handling, and conditioning for efficient use.

Approved, April 9, 1924.

[PUBLIC No. 172--68TH CONGRESS]

[H. R. 2713]

An Act To transfer certain lands of the United States from the Rocky Mountain National Park to the Colorado National Forest, Colorado

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That those portions of the following-described tracts now within the Rocky Mountain National Park be, and are hereby, transferred to the Colorado National Forest and shall hereafter be subject to all laws relating to the use and administration of the national

forests: Section 10; northwest quarter of southeast quarter, southwest quarter of the northeast quarter, and the southwest quarter of section 11; northwest quarter of the northeast quarter, north half of the northwest quarter, and the southwest quarter of the northwest quarter of section 15; and the northeast quarter of section 16; township 6 north, range 75 west, sixth principal meridian.

Approved, June 2, 1924.

[PUBLIC—No. 198—68TH CONGRESS]

[H. R. 4985]

An Act To repeal the first proviso of section 4 of an Act to establish a national park in the Territory of Hawaii, approved August 1, 1916

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That the first proviso of section 4 of an Act entitled "An Act to establish a national park in the Territory of Hawaii," approved August 1, 1916, which is in words and figures following: "Provided, That no appropriation for the maintenance, supervision, and improvement of said park in excess of \$10,000 annually shall be made unless the same shall have first been expressly authorized by law," be, and the same is hereby, repealed.

Approved, June 5, 1924.

[Excerpts from an act making appropriations for the Department of the Interior for the fiscal year ending June 30, 1925, and for other purposes]

#### DEPARTMENT OF THE INTERIOR

#### NATIONAL PARKS

For the Director of the National Park Service and other personal services in the District of Columbia in accordance with "The Classification Act of 1923," \$44,000.

For compensation to be fixed by the Secretary of the Interior for accounting services in the District of Columbia or in the field in checking and verifying the accounts and records of the various operators, licensees, and permittees conducting utilities and other enterprises within the national parks and monuments under his jurisdiction, including necessary travel and incidental expenses while absent from their designated headquarters, \$6,000.

Crater Lake National Park, Oregon: For administration, protection, and maintenance, including not exceeding \$1,500 for the purchase, maintenance, operation, and repair of motor-driven passenger-carrying vehicles for the use of the superintendent and employees in connection with general park work, \$26,400; for construction of physical improvements, \$4,300, of which not exceeding \$2,800 shall be available for a community house at the rim auto camp, and \$1,500 for altering a cabin into an administration building; in all, \$30,700.

General Grant National Park, California: For administration, protection, maintenance, and improvement, \$14,175.

Glacier National Park, Montana: For administration, protection, and maintenance, including necessary repairs to the roads from Glacier Park Station through the Blackfeet Indian Reservation to various points in the boundary line of the Glacier National Park and the international boundary, including not exceeding \$3,200 for the purchase, maintenance, operation, and repair of horse-drawn and motor-driven passenger-carrying vehicles for the use of the superintendent and employees in connection with general park work, \$145,000; for construction of physical improvements, \$136,000, including not exceeding \$100,000 for the continued construction of the transmountain road connecting the east and west sides of the park, and not exceeding \$7,400 for the construction of buildings; in all, \$281,000.

Grand Canyon National Park, Arizona: For administration, protection, and maintenance, including not exceeding \$2,200 for the purchase, maintenance, operation, and repair of motor-driven passenger-carrying vehicles for the use of the superintendent and employees in connection with general park work, \$95,000; for construction of physical improvements, \$21,000, including not exceeding \$11,500 for the construction of buildings, of which not exceeding \$3,000 shall be available for the construction of a mess hall; in all, \$116,000.



For the construction of trails within the Grand Canyon National Park, \$100,000, to be immediately available and to remain available until expended: *Provided*, That said sum may be used by the Secretary of the Interior for the purchase from the county of Coconino, Arizona, of the Bright Angel toll road and trail within said park under such terms and conditions as he may deem proper and the Secretary of the Interior is authorized to construct an approach road from the National Old Trails Highway to the south boundary of said park.

Hawaii National Park: For administration, protection, maintenance, and improvement, including not exceeding \$800 for the purchase, maintenance, operation, and repair of motor-driven passenger-carrying vehicles for the use of the superintendent and employees in connection with general park work, and including not exceeding \$600 for the construction of buildings, \$10,000.

Hot Springs National Park, Arkansas: For administration, protection, and maintenance, and improvement, including not exceeding \$2,500 for the purchase, maintenance, operation, and repair of motor-driven passenger-carrying vehicles for the use of the superintendent and employees in connection with general park work, \$60,000; for construction of physical improvements, \$18,000, including not exceeding \$15,000 for replacement of existing sewer along front of Hot Springs National Park and to continue off reservation to connect with sewer system of city of Hot Springs, and not exceeding \$3,000 for erection of a comfort station; in all, \$78,000: *Provided*, That the Secretary of the Interior be, and is hereby, authorized, in his discretion, to accept the fee-simple title to a certain tract of land adjoining the Hot Springs National Park, Arkansas, described as being the west half of the southwest quarter of the southwest quarter of section 27, township 2 south, range 19 west, fifth principal meridian, containing sixteen acres, more or less, situated in Garland County, State of Arkansas, donated to the United States of America for use in connection with Hot Springs National Park: *Provided*, That such lands when accepted by the Secretary of the Interior shall be and remain a part of Hot Springs National Park.

Lafayette National Park, Maine: For administration, protection, maintenance, and improvement, including not exceeding \$500 for the purchase, maintenance, operation, and repair of motor-driven passenger-carrying vehicles for the use of the superintendent and employees in connection with general park work, and including \$1,500 for the construction of ranger quarters, \$34,700.

Lassen Volcanic National Park, California: For protection and improvement, \$3,000.

Mesa Verde National Park, Colorado: For administration, protection, and maintenance, including not exceeding \$2,400 for the purchase, maintenance, operation, and repair of horse-drawn and motor-driven passenger-carrying vehicles for the use of the superintendent and employees in connection with general park work, \$33,000; for construction of physical improvements, \$5,500, which shall be available for the construction of buildings, including not exceeding \$2,500 for a ranger station and not exceeding \$3,000 for employees' dormitory building and mess hall; for additional water system at Spruce Tree Camp Headquarters, \$4,000; in all, \$42,500.

Mount McKinley National Park, Alaska: For protection and improvement, including not exceeding \$200 for the construction of buildings, \$11,020.

Mount Rainier National Park, Washington: For administration, protection, and maintenance, including not exceeding \$1,800 for the purchase, maintenance, operation, and repair of motor-driven passenger-carrying vehicles for the use of the superintendent and employees in connection with general park work, \$72,000; for construction of physical improvements, \$28,000, including not exceeding \$25,000 for completion of the widening of the Nisqually entrance to Paradise Valley Road, and not exceeding \$3,500 for the construction of buildings, of which not exceeding \$3,000 shall be available for a comfort station; in all, \$100,000.

Platt National Park, Oklahoma: For administration, protection, maintenance, and improvement, \$10,000.

Rocky Mountain National Park, Colorado: For administration, protection, and maintenance, including not exceeding \$1,000 for the purchase, maintenance, operation, and repair of motor-driven passenger-carrying vehicles for the use of the superintendent and employees in connection with general park work, \$65,000; for construction of physical improvements, \$28,000, including



not exceeding \$15,000 for the continuation of widening and other improvements of the Fall River Road, and including \$7,500 for the construction of buildings; in all, \$93,000.

**Sequoia National Park, California:** For administration, protection, and maintenance, including not exceeding \$2,180 for the purchase, maintenance, operation, and repair of motor-driven passenger-carrying vehicles for the use of the superintendent and employees in connection with general park work, \$55,000; for construction of physical improvements, \$81,000, including not exceeding \$40,000 for completion of widening and grading Middle Fork Road, not exceeding \$39,500 for a sewer system at Giant Forest, and not exceeding \$1,750 for the construction of buildings; in all, \$136,000.

**Wind Cave National Park, South Dakota:** For administration, protection, maintenance, and improvement, including not exceeding \$800 for construction of an entrance building to the cave, \$10,000.

**Yellowstone National Park, Wyoming:** For administration, protection, and maintenance, including not exceeding \$7,600 for the purchase, maintenance, operation, and repair of horse-drawn and motor-driven passenger-carrying vehicles for the use of the superintendent and employees in connection with general park work, not exceeding \$8,400 for maintenance of the road in the forest reserve leading out of the park from the east boundary, not exceeding \$7,500 for maintenance of the road in the forest reserve leading out of the park from the south boundary, and including feed for buffalo and other animals and salaries of buffalo keepers, \$336,800; for construction of physical improvements, \$36,000, including not exceeding \$25,000 for a sewer system at the Grand Canyon of the Yellowstone, not exceeding \$10,000 for auto camps, and not exceeding \$1,200 for the construction of buildings; in all, \$372,800.

**Yosemite National Park, California:** For administration, protection, and maintenance, including not exceeding \$2,100 for the purchase, maintenance, operation, and repair of horse-drawn and motor-driven passenger-carrying vehicles for the use of the superintendent and employees in connection with general park work, not exceeding \$3,200 for maintenance of that part of the Wawona Road in the Sierra National Forest between the park boundary two miles north of Wawona and the park boundary near the Mariposa Grove of Big Trees, and not exceeding \$2,000 for maintenance of the road in the Stanislaus National Forest connecting the Tioga Road with Mather Station on the Hetch Hetchy Railroad, \$229,000; for construction of physical improvements, \$80,000, including not exceeding \$25,000 for completion of installation of flush toilets and waste hoppers in public camps, not exceeding \$10,000 for the installation of a garbage incinerator, and not exceeding \$9,500 for the completion of the installation of an administrative unit at Tuolumne Meadows and the erection of ranger stations at Alder Creek and Bridal Veil stations on the Wawona Road and El Capitan Station on the Big Oak Flat Road; in all, \$309,000.

**Zion National Park, Utah:** For administration, protection, maintenance, and improvement, \$15,190.

**National monuments:** For administration, protection, maintenance, preservation, and improvement of the national monuments, \$20,750, of which the sum of \$5,000 shall be immediately available for construction of physical improvements of Carlsbad Cave National Monument.

For reconstruction, replacement, and repair of roads, trails, bridges, buildings, and other physical improvements in national parks or national monuments that are damaged or destroyed by flood, fire, storm, or other unavoidable causes, during the fiscal year 1925, \$20,000.

**Fighting forest fires in national parks:** For fighting forest fires in national parks or other areas administered by the National Park Service, or fires that endanger such areas, and for replacing buildings or other physical improvements that have been destroyed by forest fires within such areas, \$20,000: *Provided*, That these funds shall not be used for any precautionary fire protection or patrol work prior to actual occurrence of the fire: *And provided further*, That the allotment of these funds to the various national parks or areas administered by the National Park Service for fire-fighting purposes shall be made by the Secretary of the Interior, and then only after the obligation for the expenditure has been incurred, and the Secretary of the Interior shall submit with his annual estimate of expenditures a report showing the location, size, and description of each forest fire, together with the number of men, their classification, and rate of pay and actual time employed,

and a statement of expenditures showing the cost for labor, supplies, special service, and other expenses covered by the expenditures made from these funds.

Ten per centum of the foregoing amounts shall be available interchangeably for expenditures in the various national parks named, but not more than 10 per centum shall be added to the amount appropriated for any one of said parks or for any particular item within a park.

Appropriations herein made for construction of physical improvements in national parks shall be immediately available.

Approved June 5, 1924.

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[PUBLIC—No. 239—68TH CONGRESS]

[S. 1987]

An Act Accepting certain tracts of land in the city of Medford, Jackson County, Oregon

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That the Secretary of the Interior be, and he is hereby, authorized to accept certain tracts of land in the city of Medford, Jackson County, Oregon, described as lots numbered 15 and 16, block 9, amended plat to Queen Ann Addition to the city of Medford; and lot 3, block 2, central subdivision to the city of Medford, which have been tendered to the United States of America in fee simple by the city of Medford, Oregon, as sites for buildings to be used in connection with the administration of Crater Lake National Park, Oregon.

Approved, June 7, 1924.

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[PUBLIC—No. 227—68TH CONGRESS]

[S. 668]

An Act To establish the Utah National Park in the State of Utah

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That there is hereby reserved and withdrawn from settlement, occupancy, or disposal under the laws of the United States and dedicated and set apart as a public park for the benefit and enjoyment of the people, under the name of the "Utah National Park," the tract of land in the State of Utah particularly described by and included within metes and bounds, as follows, to wit:

Unsurveyed sections 31 and 32, township 36 south, range 3 west; surveyed section 36, township 36 south, range 4 west; north half, southwest quarter and west half of the southeast quarter of partially surveyed section 5; unsurveyed sections 6 and 7, west half, west half of the northeast quarter, and west half of the southwest quarter of partially surveyed section 8, partially surveyed section 17 and unsurveyed section 18, township 37 south, range 3 west; and unsurveyed sections 1, 12, and 13, township 37 south, range 4, all west of the Salt Lake meridian, in the State of Utah: *Provided*, That all the land within the exterior boundaries of the aforesaid tract shall first become the property of the United States.

SEC. 2. That the administration, protection, and promotion of said Utah National Park shall be exercised under the direction of the Secretary of the Interior by the National Park Service, subject to the provisions of the Act of August 25, 1916, entitled "An Act to establish a National Park Service, and for other purposes."

SEC. 3. That nothing herein contained shall affect any valid existing claim, location, or entry under the land laws of the United States, whether for homestead, mineral, right of way, or any other purpose whatsoever, or shall affect the rights of any such claimant, locator, or entryman to the full use and enjoyment of his land: *Provided*, That the Secretary of the Interior is hereby authorized to exchange, in his discretion, alienated lands in this and Zion National Park for unappropriated and unreserved public lands of equal value and approximately equal area in the State of Utah outside of said parks.

Approved, June 7, 1924.



## PROCLAMATIONS

## [CHIRICAHUA NATIONAL MONUMENT—ARIZONA]

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA

## A PROCLAMATION

Whereas certain natural formations, known as "The Pinnacles," within the Coronado National Forest, in the State of Arizona, are of scientific interest, and it appears that the public interests will be promoted by reserving as much land as may be necessary for the proper protection thereof as a National Monument.

Now, therefore, I, Calvin Coolidge, President of the United States of America, by virtue of the power in me vested by section two of the Act of Congress approved June eight, nineteen hundred and six, entitled "An Act for the preservation of American antiquities," do proclaim that there are hereby reserved from all forms of appropriation under the public land laws, subject to all prior valid adverse claims, and set apart as a National Monument the following-described tracts of land in the State of Arizona:

W $\frac{1}{2}$  Sections 19, 30, and 31, Township 16 South, Range 30 East, G. & S. R. M.; Sections 24, 25, and 36, Township 16 South, Range 29 $\frac{1}{2}$  East, G. & S. R. M.; S $\frac{1}{2}$  Section 24, unsurveyed; Section 25, unsurveyed; Section 36, unsurveyed; Township 16 South, Range 29 East, G. & S. R. M.

The reservation made by this proclamation is not intended to prevent the use of the lands for National Forest purposes under the proclamation establishing the Coronado National Forest, and the two reservations shall both be effective on the land withdrawn, but the National Monument hereby established shall be the dominant reservation, and any use of the land which interferes with its preservation or protection as a National Monument is hereby forbidden.

Warning is hereby given to all unauthorized persons not to appropriate, injure, deface, remove, or destroy any feature of this National Monument or to locate or settle on any of the lands reserved by this proclamation.

In witness whereof I have hereunto set my hand and caused the seal of the United States to be affixed.

Done at the City of Washington this 18 day of April, in the year of our Lord one thousand nine hundred and twenty-four, and of the Independence of the United States of America the one hundred and forty-eighth.

[SEAL.]

CALVIN COOLIDGE.

By the President:

CHARLES E. HUGHES,

*Secretary of State.*

(No. 1692)

## [CARLSBAD CAVE NATIONAL MONUMENT—NEW MEXICO]

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA

## A PROCLAMATION

Whereas there is located in section thirty-one, township twenty-four south, range twenty-five east, and section thirty-six, township twenty-four south, range twenty-four east of the New Mexico Principal Meridian, in southeastern New Mexico, near the town of Carlsbad, a limestone cavern known as the Carlsbad Cave, of extraordinary proportions and of unusual beauty and variety of natural decoration; and

Whereas beyond the spacious chambers that have been explored other vast chambers of unknown character and dimensions exist; and

Whereas the several chambers contain stalactites, stalagmites, and other formations in such unusual number, size, beauty of form, and variety of figure as to make this a cavern equal, if not superior, in both scientific and popular interest to the better known caves; and



Whereas it appears that the public interest would be promoted by reserving this natural wonder as a National Monument, together with as much land as may be needed for the protection, not only of the known entrance, but such other entrances as may be found:

Now, therefore, I, Calvin Coolidge, President of the United States of America, by authority of the power in me vested by section two of the act of Congress entitled "An Act for the preservation of American antiquities," approved June eighth, nineteen hundred and six (34 Stat. 225), do proclaim that there is hereby reserved from all forms of appropriation under the public-land laws, subject to all valid existing claims, and set apart as a National Monument to be known as the Carlsbad Cave National Monument all that piece or parcel of land in the County of Eddy, State of New Mexico, shown upon the diagram hereto annexed and made a part hereof, and more particularly described as follows: lots one and two, section thirty-one, township twenty-four south, range twenty-five east, and section thirty-six, township twenty-four south, range twenty-four east of the New Mexico Principal Meridian.

Warning is hereby expressly given to all unauthorized persons not to appropriate, injure, destroy, or remove any feature of this Monument and not to locate or settle upon any of the lands thereof.

The Director of the National Park Service, under the direction of the Secretary of the Interior, shall have the supervision, management, and control of this Monument as provided in the act of Congress entitled "An act to establish a National Park Service, and for other purposes," approved August twenty-fifth, nineteen hundred and sixteen (39 Stat. 535), and Acts additional thereto or amendatory thereof.

In witness whereof I have hereunto set my hand and caused the seal of the United States to be affixed.

Done in the City of Washington this 25th day of October, in the year of our Lord one thousand nine hundred and twenty-three and of the Independence of the United States of America the one hundred and forty-eighth.

[SEAL]

CALVIN COOLIDGE.

By the President:

CHARLES E. HUGHES,

*Secretary of State.*

[No. 1679]

#### [PINNACLES NATIONAL MONUMENT—CALIFORNIA]

(Third Proclamation)

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA

#### A PROCLAMATION

Whereas, it appears that the public interest would be promoted by adding to the Pinnacles National Monument in the State of California, certain adjoining lands on which are located a spring of water and valuable camping sites.

Now, therefore, I, Calvin Coolidge, President of the United States of America, by authority of the power in me vested by section two of the act of Congress entitled, "An act for the Preservation of American antiquities," approved June eighth, nineteen hundred and six (34 Stat., 225) do proclaim that the E½ of Section 4, in T. 17 S., R. 7 E., Mount Diablo Meridian, is hereby reserved from all forms of appropriation under the public land laws, subject to all valid existing claims, and set apart as an addition to the Pinnacles National Monument and that the boundaries of the said National Monument are now as shown on the diagram hereto annexed and made a part hereof.

Warning is hereby expressly given to all unauthorized persons not to appropriate, injure, destroy, or remove any feature of this Monument and not to locate or settle upon any of the lands thereof.

The Director of the National Park Service, under the direction of the Secretary of the Interior, shall have the supervision, management, and control of this Monument as provided in the Act of Congress entitled, "An act to establish

a National Park Service and for other purposes," approved August twenty-fifth, nineteen hundred and sixteen (39 Stat., 535) and Acts additional thereto or amendatory thereof.

In witness whereof, I have hereunto set my hand and caused the seal of the United States to be affixed.

Done in the City of Washington this 2d day of July in the year of our Lord one thousand nine hundred and twenty-four and of the Independence of the United States of America the one hundred and forty-eighth.

[SEAL.]

CALVIN COOLIDGE.

By the President:

CHARLES E. HUGHES,  
*Secretary of State.*

[No. 1704]

[CRATERS OF THE MOON NATIONAL MONUMENT—IDAHO]

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA

A PROCLAMATION

Whereas there is located in townships one south, one and two north, ranges twenty-four and twenty-five east of the Boise Meridian, in Butte and Blaine Counties, Idaho, an area which contains a remarkable fissure eruption together with its associated volcanic cones, craters, rifts, lava flows, caves, natural bridges and other phenomena characteristic of volcanic action which are of unusual scientific value and general interest; and

Whereas this area contains many curious and unusual phenomena of great educational value and has a weird and scenic landscape peculiar to itself; and

Whereas it appears that the public interest would be promoted by reserving these volcanic features as a National Monument, together with as much land as may be needed for the protection thereof:

Now, therefore, I, Calvin Coolidge, President of the United States of America, by authority of the power in me vested by section two of the act of Congress entitled "An Act for the preservation of American antiquities," approved June eighth, nineteen hundred and six (34 Stat., 225) do proclaim that there is hereby reserved from all forms of appropriation under the public land laws, subject to all valid existing claims, and set apart as a National Monument all that piece or parcel of land in the Counties of Butte and Blaine, State of Idaho, shown as the Craters of the Moon National Monument upon the diagram hereto annexed and made a part hereof.

Warning is hereby expressly given to all unauthorized persons not to appropriate, injure, destroy, or remove any feature of this Monument and not to locate or settle upon any of the lands thereof.

The Director of the National Park Service, under the direction of the Secretary of the Interior, shall have the supervision, management, and control of this Monument as provided in the act of Congress entitled "An Act to establish a National Park Service and for other purposes," approved August twenty-fifth, nineteen hundred and sixteen (39 Stat., 535) and Acts additional thereto or amendatory thereof.

In witness whereof I have hereunto set my hand and caused the seal of the United States to be affixed.

Done in the City of Washington this 2d day of May in the year of our Lord one thousand nine hundred and twenty-four and of the Independence of the United States of America the one hundred and forty-eighth.

[SEAL.]

CALVIN COOLIDGE.

By the President:

CHARLES E. HUGHES,  
*Secretary of State.*

[No. 1694]

## EXECUTIVE ORDERS

## EXECUTIVE ORDER

## ALASKA

It is hereby ordered that Executive Order No. 3617, dated January 13, 1922, withdrawing a certain unsurveyed area in Alaska near Mt. McKinley National Park for use in the administration thereof, be, and the same is hereby, revoked in so far as it affects the N $\frac{1}{2}$  of N $\frac{1}{2}$  and SW $\frac{1}{4}$  NW $\frac{1}{4}$  Sec. 4, T. 14 S., R. 7 W., F. B. M.

And it is further ordered, pursuant to the provisions of the act of Congress approved March 12, 1914 (38 Stat., 305), that the above-described tract and certain adjoining land, to wit: N $\frac{1}{2}$  of N $\frac{1}{2}$ , SW $\frac{1}{4}$  NW $\frac{1}{4}$ , N $\frac{1}{2}$  SE $\frac{1}{4}$  NW $\frac{1}{4}$  and N $\frac{1}{2}$  SW $\frac{1}{4}$  NE $\frac{1}{4}$  Sec. 4, T. 14 S., R: 7 W., F. B. M., be, and the same are hereby, withdrawn from settlement, location, sale, entry or other disposition and reserved for use in connection with the construction and operation of railroad lines under said act, under such regulations as have been or may hereafter be prescribed.

CALVIN COOLIDGE.

THE WHITE HOUSE,

*January 21, 1924.*

[No. 3946]

## EXECUTIVE ORDER

## MICHIGAN

Under authority of the act of Congress approved June 25, 1910 (36 Stat. 847), as amended by the act of August 24, 1912 (37 Stat., 497), it is hereby ordered that the public lands in Isle Royale in the State of Michigan be, and the same are hereby, withdrawn subject to the provisions and conditions of said acts, pending determination as to the advisability of including such lands in a national monument.

CALVIN COOLIDGE.

THE WHITE HOUSE,

*March 22, 1924.*

[No. 3976]

## EXECUTIVE ORDER

## ALASKA

It is hereby ordered, under authority of the act of Congress approved June 25, 1910 (36 Stat. 847), as amended by the act of August 24, 1912 (37 Stat. 497), that the public lands lying within the hereinafter described boundaries be, and they are hereby, temporarily withdrawn pending determination as to the advisability of including the same in a national monument, subject to the conditions of said acts and to all prior claims lawfully initiated and maintained:

Beginning at the western extremity of Cape Fairweather on the west coast of Alaska; thence in a northeasterly direction to the summit of Mount Fairweather on the international boundary between Canada and the United States; thence following such boundary easterly, northeasterly, and easterly to Monument No. 157 of the survey of such boundary by the International Boundary Commission approved June 9, 1923; thence east following the latitude of said monument to an intersection with the right bank of Chilkat Inlet; thence southerly along the right banks of said inlet and Lynn Canal to Icy Strait; thence westerly along the north shores of Icy Strait and Cross Sound to the Pacific Ocean; thence in a general northwesterly direction along the shore of the Pacific Ocean to Cape Fairweather, the place of beginning, containing approximately 2,560,000 acres.

CALVIN COOLIDGE.

THE WHITE HOUSE,

*April 1, 1924.*

[No. 3983]



## EXECUTIVE ORDER

## NEW MEXICO

It is hereby ordered, under authority of the act of Congress approved June 25, 1910 (36 Stat. 847), as amended by the act of August 24, 1912 (37 Stat. 497), that the public lands in the following-described area in the State of New Mexico be, and the same are hereby, temporarily withdrawn, subject to the conditions of said acts, for classification and pending determination as to the advisability of reserving the same for national park or monument purposes:

## New Mexico Principal Meridian

- In T. 25 S., R. 22 E., Secs. 24, 25, 35, and 36;
- In T. 26 S., R. 22 E., Secs. 1, 2, 11, 12, 13, 14, and 19 to 36, inclusive;
- In T. 24 S., R. 23 E., Secs. 25, 26, 27, 28, 33, 34, 35, and 36;
- All T. 25 S., R. 23 E.;
- In T. 26 S., R. 23 E., Secs. 4 to 9, inclusive, 16 to 26, inclusive, and 28 to 33, inclusive;
- In T. 24 S., R. 24 E., Secs. 25 to 35, inclusive;
- In T. 25 S., R. 24 E., Secs. 1 to 18, inclusive;
- In T. 24 S., R. 25 E., Secs. 29, 30, NE  $\frac{1}{4}$ , E  $\frac{1}{2}$  NW  $\frac{1}{4}$  and S  $\frac{1}{2}$  Sec. 31, all Sec. 32;
- In T. 25 S., R. 25 E., Secs. 5, 6, 7, 8, 17, and 18.

*Provided*, That this withdrawal shall not prevent or preclude the use of these lands, or any of them, for grazing or other analogous purposes temporary in character and not inconsistent with the purpose of this order.

CALVIN COOLIDGE.

THE WHITE HOUSE,  
April 2, 1924.

[No. 3984]

## EXECUTIVE ORDER

## ARIZONA

It is hereby ordered, under authority of the act of Congress approved June 25, 1910 (36 Stat., 847), as amended by the act of August 24, 1912 (37 Stat., 497), that the following described tract of land in Arizona be, and the same is hereby, temporarily withdrawn subject to the conditions of said acts, for classification and pending enactment of legislation for its proper disposition:

In T. 30 N., R. 2 E., G. & S. R. M., E  $\frac{1}{2}$  SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  NE  $\frac{1}{4}$  and NE  $\frac{1}{4}$  SE  $\frac{1}{4}$  NE  $\frac{1}{4}$  Sec. 11, NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  NW  $\frac{1}{4}$ , NE  $\frac{1}{4}$  NW  $\frac{1}{4}$  NW  $\frac{1}{4}$ , S  $\frac{1}{2}$  NW  $\frac{1}{4}$  NW  $\frac{1}{4}$ , NW  $\frac{1}{4}$  SW  $\frac{1}{4}$  NW  $\frac{1}{4}$  and NW  $\frac{1}{4}$  NE  $\frac{1}{4}$  SW  $\frac{1}{4}$  NW  $\frac{1}{4}$  Sec. 12, 67.5 acres.

CALVIN COOLIDGE.

THE WHITE HOUSE,  
April 25, 1924.

[No. 3999]

## EXECUTIVE ORDER

## SCOTTS BLUFF NATIONAL MONUMENT—NEBRASKA

Proclamation of December 12, 1919 (No. 1547-41 Stat., 1779) reserving 2,053.83 acres in Scotts Bluff County, Nebraska, as the Scotts Bluff National Monument, is hereby modified by eliminating from said reservation the NE  $\frac{1}{4}$ , Section 9, Township 21 North, Range 55 West of the 6th Principal Meridian, thus reducing the area of the said National Monument to 1893.83 acres.

CALVIN COOLIDGE.

THE WHITE HOUSE,  
May 9, 1924.

[No. 4008]

## APPENDIX E

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#### AN ACT TO ESTABLISH A NATIONAL PARK SERVICE, AND FOR OTHER PURPOSES

(39 Stat. 535)

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That there is hereby created in the Department of the Interior a service to be called the National Park Service, which shall be under the charge of a director, who shall be appointed by the Secretary and who shall receive a salary of \$4,500 per annum. There shall also be appointed by the Secretary the following assistants and other employees at the salaries designated: One assistant director, at \$2,500 per annum; one chief clerk, at \$2,000 per annum; one draftsman, at \$1,800 per annum; one messenger, at \$600 per annum; and, in addition thereto, such other employees as the Secretary of the Interior shall deem necessary: *Provided*, That not more than \$8,100 annually shall be expended for salaries of experts, assistants, and employees within the District of Columbia not herein specifically enumerated unless previously authorized by law. The service thus established shall promote and regulate the use of the Federal areas known as national parks, monuments, and reservations hereinafter specified by such means and measures as conform to the fundamental purpose of the said parks, monuments, and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.

SEC. 2. That the director shall, under the direction of the Secretary of the Interior, have the supervision, management, and control of the several national parks and national monuments which are now under the jurisdiction of the Department of the Interior, and of the Hot Springs Reservation in the State of Arkansas, and of such other national parks and reservations of like character as may be hereafter created by Congress: *Provided*, That in the supervision, management, and control of national monuments contiguous to national forests the Secretary of Agriculture may cooperate with said National Park Service to such extent as may be requested by the Secretary of the Interior.

SEC. 3. That the Secretary of the Interior shall make and publish such rules and regulations as he may deem necessary or proper for the use and management of the parks, monuments, and reservations under the jurisdiction of the National Park Service, and any violations of any of the rules and regulations authorized by this act shall be punished as provided for in section fifty of the act entitled "An act to codify and amend the penal laws of the United States," approved March fourth, nineteen hundred and nine, as amended by section six of the act of June twenty-fifth, nineteen hundred and ten (Thirty-sixth United States Statutes at Large, page eight hundred and fifty-seven). He may also, upon terms and conditions to be fixed by him, sell or dispose of timber in those cases where in his judgment the cutting of such timber is required in order to control the attacks of insects or diseases or otherwise conserve the scenery or the natural or historic objects in any such park, monument, or reservation. He may also provide in his discretion for the destruction of such animals and of such plant life as may be detrimental to the use of any of said parks, monuments, or reservations. He may also grant privileges, leases, and permits for the use of land for the accommodation of visitors in the various parks, monuments, or other reservations herein provided for, but for periods not exceeding

twenty years; and no natural curiosities, wonders, or objects of interest shall be leased, rented, or granted to anyone on such terms as to interfere with free access to them by the public: *Provided however*, That the Secretary of the Interior may, under such rules and regulations and on such terms as he may prescribe, grant the privilege to graze livestock within any national park, monument, or reservation herein referred to when in his judgment such use is not detrimental to the primary purpose for which such park, monument, or reservation was created, except that this provision shall not apply to the Yellowstone National Park.

SEC. 4. That nothing in this act contained shall affect or modify the provisions of the act approved February fifteenth, nineteen hundred and one, entitled "An act relating to rights of way through certain parks, reservations, and other public lands."

Approved, August 25, 1916.

The act of August 25, 1916 (39 Stat. 535), was amended by the act of June 2, 1920 (41 Stat. 731, 732), as follows:

SEC. 5. \* \* \* Any person, or persons, \* \* \*, or who shall violate any of the other provisions of this act, or any rule or regulation that may be promulgated by the Secretary of the Interior \* \* \*, shall be subject to the penalty provided for the violation of rules and regulations of the Secretary of the Interior authorized by section 3 of the act of Congress approved August 25, 1916 (Thirty-ninth Statutes, page 535), entitled "An act to establish a National Park Service, and for other purposes," which section is hereby amended by striking therefrom the words "and any violations of any of the rules and regulations authorized by this act shall be punished as provided for in section 50 of the act entitled 'An act to codify and amend the penal laws of the United States,' approved March 4, 1909, as amended by section 6 of the act of June 25, 1910 (Thirty-sixth United States Statutes at Large, page 857)," and inserting in lieu thereof the words "and any violation of any of the rules and regulations authorized by this act shall be punished by a fine of not more than \$500 or imprisonment for not exceeding six months, or both, and be adjudged to pay all cost of the proceedings": *Provided*, That nothing herein shall be construed as repealing or in any way modifying the authority granted the Secretary of the Interior by said section 3 of the said act approved August 25, 1916, to sell or dispose of timber in national parks in those cases where, in his judgment, the cutting of such timber is required in order to control the attacks of insects or diseases or otherwise conserve the scenery of the natural or historic objects in such parks and to provide for the destruction of such animals and such plant life as may be detrimental to the use of any of said parks, or the authority granted to said Secretary by the act approved April 9, 1912, entitled "An act to authorize the Secretary of the Interior to secure for the United States title to patented lands in the Yosemite National Park, and for other purposes," as amended by the act approved April 16, 1914.

#### AN ACT FOR THE PRESERVATION OF AMERICAN ANTIQUITIES

(34 Stat. 225)

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That any person who shall appropriate, excavate, injure, or destroy any historic or prehistoric ruin or monument, or any object of antiquity, situated on lands owned or controlled by the Government of the United States, without the permission of the Secretary of the department of the Government having jurisdiction over the lands on which said antiquities are situated, shall upon conviction be fined in a sum of not more than \$500 or be imprisoned for a period of not more than ninety days, or shall suffer both fine and imprisonment, in the discretion of the court.

SEC. 2. That the President of the United States is hereby authorized, in his discretion, to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States to be national monuments, and may reserve as a part thereof parcels of land, the limit of which in all cases shall be confined to the smallest area compatible with the proper care and management of the objects to be protected: *Provided*, That when such objects are situated upon a tract covered by



a bona fide unperfected claim or held in private ownership, the tracts, or so much thereof as may be necessary for the proper care and management of the objects, may be relinquished to the Government, and the Secretary of the Interior is hereby authorized to accept the relinquishment of such tracts in behalf of the Government of the United States.

SEC. 3. That permits for the examination of ruins, the excavation of archaeological sites, and the gathering of objects of antiquity upon the lands under their respective jurisdictions may be granted by the Secretaries of the Interior, Agriculture, and War to institutions which they may deem properly qualified to conduct such examination, excavation, or gathering, subject to such rules and regulations as they may prescribe: *Provided*, That the examinations, excavations, and gatherings are undertaken for the benefit of reputable museums, universities, colleges, or other recognized scientific or educational institutions, with a view to increasing the knowledge of such objects, and that the gatherings shall be made for permanent preservation in public museums.

SEC. 4. That the Secretaries of the departments aforesaid shall make and publish from time to time uniform rules and regulations for the purpose of carrying out the provisions of this act.

Approved, June 8, 1906.











DEPARTMENT OF THE INTERIOR

---

R E P O R T

OF THE

DIRECTOR OF  
THE NATIONAL PARK SERVICE

TO THE

SECRETARY OF THE INTERIOR

FOR THE

FISCAL YEAR ENDED JUNE 30, 1925  
AND THE TRAVEL SEASON, 1925



WASHINGTON  
GOVERNMENT PRINTING OFFICE  
1925

THE NATIONAL PARK SERVICE  
DIRECTOR OF THE NATIONAL PARK SERVICE

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# ANNUAL REPORT OF THE DIRECTOR OF THE NATIONAL PARK SERVICE

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DEPARTMENT OF THE INTERIOR,  
NATIONAL PARK SERVICE,  
*Washington, D. C., October 3, 1925.*

In each of my preceding annual reports since 1918 I have had to report an increase in travel to the national parks and monuments over the preceding year. It is again my pleasure to report to you a large increase, for this year our records show a total of 2,108,084 visitors to our parks and monuments as compared with 1,670,908 last year.

## SIGNIFICANCE OF INCREASE IN PARK TRAVEL

These figures are of significance to every thinking American, for it is evident that the nation-wide revival of interest in outdoor recreation is carrying our health and pleasure seeking people into the national parks in a far larger degree than was expected 10 years ago, when the service was created.

The travel induced by the attractions of the national parks, and irrespective of other local attractions, means the distribution of hundreds of millions of dollars throughout the country, of which a great portion is left in the States in which the national parks are located. It is the national park cross-country tourist who distributes money into sections that are away from money-making industrial centers. Tourist money goes straight into circulation and immediately benefits the locality visited.

This great flow of tourist gold is adding new life to communities unprogressive for years. It is a particularly dependable annual source of income for many of the Western States. On it have been built the plans of hundreds of western towns now grown into cities of considerable size. Hotels, garages, and restaurants to meet the demands of visitors have increased in numbers annually and have added to the attractiveness and convenience of these places for their own inhabitants. It has enabled the railroads to arrange for better facilities for the accommodation of their patrons and to enlarge and beautify their terminal activities. It has been told me in many sections of the West that when short crops and droughts produced failures, or epidemics among livestock depleted the capital investments of substantial citizens of a community, the tourist money was the stable source of income that assisted in keeping the community alive.

Every visitor is a potential settler and investor. The march of the huge wagon trains along the scarcely discernible trails in the fifties marked the beginning of the settlement of the West. The

new people were the settlers and the builders. They carried with them plows, and the seeds from which the granaries of the future were to be filled. Their descendants are the living pioneers of western development. The new West, however, is being built up by later visitors who came to see, and, having seen, brought their families to become citizens of now large prospering communities. Hundreds of thousands in the past few years have pulled staks in the East and invested in western ranches and fruit farms, in mines, and other industrial enterprises. In all this the national parks, as the scenic lodestones, through their attractions draw these future settlers and investors for their first trip and in this way contribute their vital share in the prosperity of the institutions, scenic resorts, and general business of the country.

The development of the motor car, and the expansion of good roads, have helped to bring this about. The modern automobile procured at reasonable cost has given the average American, as well as the rich man, the opportunity to see his country. Among the thousands of cars nightly parked in the larger parks, the cheaper makes by far predominate. In fact, the travel to the national parks by the motorist with his own provisions and camping equipment, prepared to spend the night in the open underneath the trees in the large public camp grounds, shows a consistent yearly increase. Motoring and the motor tourist have come to stay. The dominant note is the universal thirst for outdoor living and recreation. The possibilities for these are only limited by the desires and means of the individual. Present generations are already receiving the benefits of such sound and wholesome living and the benefits to those of the future are beyond calculation.

### ADDITIONAL NATIONAL PARKS A NECESSITY

Although the need for several additional national parks is recognized, no new ones have been created since 1919, when Grand Canyon, Lafayette, and Zion were admitted to the system. When the eighth annual report was being written it was hoped that by now the Utah National Park, to include the famous Bryce Canyon in southern Utah, would be a national park. The private holding in the area has, however, not been secured, and until this is done the provisions of the act of Congress to establish the park can not be complied with.

### SOUTHERN APPALACHIAN PARK PROJECT

During the year the service has kept in close touch with the work of the Southern Appalachian Park Commission appointed by you under authority of the act of Congress approved February 21, 1925. During May, while attending the Fifth Annual Conference on State Parks, I was able to inspect the area of the proposed Shenandoah National Park, and later in the summer Assistant Director Cammerer personally inspected the Smoky Mountain region of Tennessee-North Carolina, in company with Mr. Harlan P. Kelsey, a member of your commission. Both of these areas possess scenery of a high order and of national importance, and are readily susceptible of development for recreational purposes. The addition of one or both of these areas to the national park system is of great importance.



from the point of view both of conserving, before it is too late, outstanding examples of typical eastern scenery, and of making available for the thickly populated East other national recreation grounds and museums of nature. The greater portion of the lands involved in these two park projects are wilderness areas, and in the Smoky Mountains are found the greatest outstanding peaks east of the Rocky Mountains. Mount LeConte, which in the eastern United States is second only to Mount Mitchell in altitude, is covered with virgin timber from summit to foot.

#### INTEREST IN ISLE ROYALE PROJECT GROWS

In my last report I mentioned the fact that interested citizens of Michigan and Minnesota were earnestly at work to acquire the privately owned land on Isle Royale in Lake Superior so that it might be turned over as a gift to the people of the United States for national park or monument purposes. This work is still going on, and I hope to be able to report the successful completion of this project in my next annual report.

In August I made my first trip by water from Buffalo to Duluth, and was greatly impressed with the beauty of the scenery along the route. There is so much of real interest, and the trip is so delightful, that I prophesy the time is not far distant when instead of two or three boats leaving Buffalo each week, four or five a day will be necessary to accommodate all who want to take this trip. With Isle Royale a national park it will become a great stopping place for travelers who want to enjoy its fishing and its wilderness attractions. With the success of this project there seems to be no reason why there should not be a great expansion of the lake passenger business and a linking up of this traffic with a more extensive motor and railroad travel west to the national parks. With the proper sort of cooperation between lake steamship and railroad lines and others concerned in tourist business, much of the travel now going out of our country can be diverted to this route. Then "The Lakes plus the Mountains" may become a new travel slogan.

#### INVESTIGATION OF PROPOSED PARK PROJECTS

The action of the President's Committee on Outdoor Recreation in appointing a committee to investigate and make recommendations regarding the transfer of lands between the National Park Service and the Forest Service will have an important bearing on future enlargements of existing parks and new park projects. The members of this committee, known as the President's Coordinating Committee on National Parks and National Forests, are Hon. Henry W. Temple, Representative from Pennsylvania, chairman; Maj. W. A. Welch, general manager of the Palisades Interstate Park, New York-New Jersey; Mr. Charles Sheldon, conservationist, Washington, D. C.; W. B. Greeley, Chief Forester, United States Forest Service; and myself. The committee this summer has investigated the proposed extensions to Yellowstone and Grand Canyon, the proposed Cliff Cities National Park in New Mexico, and the proposed Mount Evans National Park in Colorado. During a part of the investigating trip I accompanied the committee.

The committee was unanimous in agreeing to an extension of Yellowstone that should include the Teton Mountains, and recommended that a representative section of the Kaibab Forest be added to Grand Canyon National Park on the north. It also recommended minor changes in the southern boundary. The committee's recommendations with regard to the proposed Cliff Cities and Mount Evans National Parks have not yet been made. As both the Park Service and the Forest Service were in full accord on the proposed extension of the boundaries of Sequoia National Park to include Mount Whitney and parts of Kings and Kern River Canyons, the committee approved this project.

The committee will later consider proposed extensions to Mount Rainier, Crater Lake, Lassen Volcanic, and Yosemite National Parks, as well as the following proposed parks: A Redwoods National Park in northern California; a Sawtooth National Park, Idaho; a Big Horn National Park, Wyo.-Mont.; a Roosevelt Memorial National Park, N. Dak.; a Killdeer National Park, N. Dak.; a Wonderland National Park, S. Dak.; and a Mena National Park, Ark.

### **TWO NEW NATIONAL MONUMENTS ESTABLISHED**

The national monument system was enlarged this year by the addition of two new monuments, one in the Southwest, and one in far-off Alaska. This brings the number of national monuments, administered by the Department of the Interior through the National Park Service, to 32.

#### **WUPATKI, ARIZ.**

On December 9, 1924, two tracts of land in Arizona, containing groups of interesting prehistoric ruins built by the ancestors of the Hopi Indians, were set aside as the Wupatki National Monument. It is believed that the buildings were constructed by the Snake family of the Hopis in their migration south from the Grand Canyon region. The total area of this new monument is 2,234.10 acres.

#### **GLACIER BAY, ALASKA**

The Glacier Bay National Monument, created by President Coolidge February 27, 1925, is the largest monument of the system, its area of approximately 1,820 square miles being nearly as great as the combined area of the other 31 national monuments. Many scientific organizations, led by the Ecological Society of America, with the indorsement of the National Geographic Society, appealed to the department for the creation of this monument on the ground that its many tidewater glaciers of first rank presented a unique opportunity for the scientific study of glacial behavior, of resulting movements and the development of flora and fauna, and of certain valuable relics of ancient interglacial forests.

### **WINTER USE OF PARKS BECOMING INCREASINGLY POPULAR**

Much enthusiasm has greeted the opportunity to enjoy winter sports in several of the national parks, as was shown by the marked increase in park travel during the winter months last year. Already



10 of the 19 national parks have become popular winter playgrounds. Of these, four—Grand Canyon, Hawaii, Hot Springs, and Platt—enjoy mild winter climates, and are not considered in connection with cold-weather sports. Rather, they afford an opportunity for the traveler to escape the rigors of the northern climates while visiting national parks.

In the other six, however, snow and ice in abundance make possible sleighing, tobogganing, skiing, snowshoeing, skating, and, in Lafayette Park, in Maine, ice-boating. In the Yosemite one may indulge in thrilling winter amusements on one side of the valley, while on the other the temperature is mild. Sequoia, General Grant, Mount Rainier, and Rocky Mountain are making rapid progress in developing facilities for enjoying the healthful indulgence in outdoor exercise in the snow. The service and the park operators have cooperated in furnishing toboggan slides and ski courses, in keeping the roads passable, and in providing accommodations for the winter visitors. In Rocky Mountain National Park the local ski club employed an instructor for three months to give free instruction in skiing, and under its auspices a ski tournament was held in the park in January. The Colorado Mountain Club held its annual outing during the month of March.

A picturesque addition to the winter sport life of Mount Rainier National Park was provided by the public operator, who imported from Alaska a sledge with 13 wolf dogs and an Eskimo driver.

### PROTECTION OF PARK WILD LIFE

It is with gratification that I report the satisfactory condition of the wild life in the national parks. The animals themselves seem to know that the parks provide a safe refuge for them, for last year several superintendents reported that when the shooting of the hunting season commenced large numbers of deer were seen making their way to the park lands.

The drought conditions which prevailed throughout the greater portion of the West last year so burned the natural forage that by the time winter came many of the normal winter ranges were exhausted. This caused considerable concern regarding the fate of the park wild life should unusually severe winter conditions prevail. Fortunately the winter was neither extremely cold nor stormy, and the majority of the park animals wintered in good condition.

The situation regarding the Yellowstone elk was particularly grave. Severe storms early in October drove the northern herd down from the mountains much earlier than usual, and had these storms continued a week or two longer thousands of elk would have been driven out of the park and slaughtered during the hunting season, which opened October 15. Fortunately a change for the better occurred in the weather conditions just before this date, stopping the northward movement of the elk to the lower altitudes, and before the end of the month they had gone back to their normal fall range. All winter the danger of almost complete extinction through starvation and hunting threatened these animals, and extreme anxiety was felt by the park officials until spring came. In spite of the fact that the winter was not especially severe, many of the elk died from weakness.



**ELK REFUGE ESTABLISHED SOUTH OF YELLOWSTONE THROUGH EFFORTS OF IZAAK WALTON LEAGUE**

The magnificent southern herd of elk in the Yellowstone National Park was similarly threatened with losses through starvation. The Bureau of Biological Survey maintains a winter elk refuge covering 2,760 acres in the Snake River Valley, but the supply of hay raised here is so scanty in comparison to the number of elk that during the winter the herds were in an extremely precarious situation. Realizing the necessity of providing sufficient hay to care for enough elk at least to form the nucleus of a new herd in case of disaster to the present herds, the Izaak Walton League of America started a campaign to save the elk. Already 1,760 acres of land in the Jackson Hole country have been purchased for use as an elk refuge and an adjoining 1,000 acres leased, at a total cost of \$36,450. The country at large owes the league a debt of gratitude for this public-spirited action. This new elk refuge, while remaining in the ownership of the league, will be administered by the Bureau of Biological Survey.

**HOOF-AND-MOUTH DISEASE**

The hoof-and-mouth epidemic which was so serious throughout California last summer was gradually brought under control during the winter and spring, but not until some of the Yosemite deer contracted the disease. The service cooperated with the Bureau of Animal Industry and the Biological Survey in controlling the epidemic, and early in the summer the park superintendent reported that no new cases of infection were appearing.

**OREGON'S COOPERATION IN PROTECTING BEAR**

Crater Lake has only a few bear, and these are a source of much interest and amusement to visitors. Last year, after several comparatively tame bear had wandered outside the park boundaries and been killed by hunters, the Governor of Oregon signed a State bill declaring an 11-months' closed season on bear in Jackson, Josephine, and Klamath Counties, which practically surround the park.

**FISH-PLANTING OPERATIONS**

Fish-planting operations in cooperation with the Bureau of Fisheries and also with State hatcheries, were continued last year to provide good fishing for visitors to the various parks. An unusual experiment in Rocky Mountain National Park was the planting of 60,000 salt-water salmon in Emerald Lake. The eggs of these fish were received from an Oregon hatchery and hatched in the Estes Park Hatchery. A shipment of 180,000 native trout eggs was made from the Federal Hatchery in Yellowstone National Park to Rocky Mountain Park, where they were hatched at the State hatchery, and another 50,000 eggs were sent to the Grand Canyon National Park.

During the summer an informal survey was made of the waters of Glacier National Park to ascertain the fisheries needs of the park. The most important point developed during this survey was the fact that there is a great deal more fish food in the park waters than was

formerly believed existed there. This means that heavier stocking of the lakes and streams can be carried on in the future. Officials of the Department of the Interior and of the Bureau of Fisheries were joined in this survey by Dr. Henry B. Ward, head of the Department of Zoology at the University of Illinois and a past president of the American Fisheries Society.

### ENTOMOLOGICAL WORK IN THE PARK FORESTS

Protection of the virgin forests of the national parks from insect depredations is an essential feature of national-park administration. The necessity of this was recognized by Congress during the past year, when an appropriation of \$25,000 was granted to make it possible to meet emergencies that might be caused by forest insects within the national parks and monuments, and to provide for the investigation, control, and prevention of spread of such insects. The Bureau of Entomology of the Department of Agriculture has cooperated whole-heartedly with this service, and at an informal conference held in Washington last January between representatives of that bureau and the National Park Service consideration was given to ways and means of combating the most serious infestations and a program of work for the year outlined.

From an entomological standpoint for several years the most serious situation has existed in the Yellowstone National Park, where the lodgepole sawfly, and needle tyer continued their defoliation of the lodgepole pines along the road to the West Yellowstone entrance. During the past year spraying operations were increased along the roads and at places of the most scenic importance, and this infestation is now disappearing. The spruce budworm defoliation of the Engelmann and Douglas spruce at the base of Crescent Hill appears to have been checked without a further increase in area, as the trees along the highway and surrounding Camp Roosevelt budded out in fine condition last season and were free from budworm attacks.

Insect control work in Crater Lake National Park resulted in the protection of the entire area south of the lake from pine beetle depredations. The work, which covered the most used portions of the park, was carried on very economically. The mountain pine beetle infestation in the vicinity of Diamond Lake and along the northern boundary of the park apparently is utterly beyond control.

The bark beetle infestation on the Greenland Plateau in Grand Canyon National Park was successfully brought under control through burning. The infected trees were felled, then brush piled around the trunks, and ignited. This method reduced the cost of the work materially.

A representative of the Bureau of Entomology inspected the needle miner and bark beetle infestations in Tuolumne Meadows in the Yosemite National Park, and reported that the needle miner activities seemed to have been entirely discontinued, while the bark beetle infestation, although still in evidence, has made no material advance since last year. He believes that the infestation will rapidly die out, and that no control operations should be undertaken at present. There was an increase in the activities of the western pine beetle in the yellow pine belt of the Big Meadows area, but



this is believed to be only temporary, induced by the drought of last year. No control measures are deemed necessary.

Another serious problem has arisen in the Yosemite, in the form of a disease or blight accompanied by insect activity in the white and red fir forests. This apparently is a disease which attacks the trees just beneath the bark, and would not kill the trees were it not generally followed by bark beetle attacks. Samples of bark have been collected, and will be studied by Bureau of Entomology experts during the winter.

If the policy of making annual appropriations for insect control work in the parks and monuments is continued, it will be possible for the Bureau of Entomology to detail one or two of its experts to devote their entire time to such work. This is very desirable, in order that the highest degree of efficiency may be attained.

### START MADE ON ROADSIDE CLEAN-UP WORK

In my preceding annual report I brought out the fact that dead and down timber and stumps along the roadsides of the parks not only were a blot on the landscape from a scenic standpoint but also provided a serious fire hazard, and I emphasized the importance of cleaning up such roadside conditions. A visitor to Yellowstone National Park last summer was much impressed, through personal observation, with the need for such roadside clean-up, and provided funds with which, as an experiment, two half-mile stretches of road, one heavily littered with dead and down timber and one requiring only a light clean-up, were cleared. Such satisfactory and economical result were obtained that this park friend then authorized the expenditure of sufficient funds to clear up as much of the road south from park headquarters at Mammoth Hot Springs as could be accomplished while favorable weather conditions prevailed. This work was carried on to the close of November, when stormy weather made continuation impossible, and nearly 11 miles of road were improved at a cost of approximately \$4,500. The roadsides were cleared from 15 to 100 feet back from the ditch line of the road on both sides, depending upon visibility of the roadsides from an automobile driven along the road. Winter snows restored natural conditions, so that by the time the travel season opened all scars left by the clean-up work had disappeared. Some additional work was done this spring at a cost of about \$1,000.

This same park friend has recently authorized the expenditure of an additional \$5,000 on further clean-up work, which was commenced early in September, and will be pushed while favorable weather conditions prevail.

### THE SANITATION PROBLEM IN THE PARKS

Where thousands of motorists visit the parks and must be accommodated in the public camp grounds, it is inevitable that serious problems of sanitation are encountered and must be solved. In some of the Yellowstone camp grounds as many as 2,000 people are sheltered a night, and in the Yosemite, where in a small space of about 4 square miles, all the hotels and accommodations of the public operators, as well as the free public camps, are located, the sani-



tation problems are equal to those of the small city. In the latter park at the height of the season from ten to twelve thousand people a day are housed on the floor of the valley, and the number of campers there, as well as in all the other parks, steadily increases. Through the excellent cooperation of the United States Public Health Service in detailing their expert sanitary engineers to study these problems, the public is assured of every precaution in safeguarding its health. The advice of that service is carefully followed, and as a result the National Park Service feels that it can say that sanitation in the parks is on as high a standard as it can be carried forward under available appropriations.

The great need, however, is not alone for enlargement of existing public camp grounds in the major parks, but the establishment of others well developed and equipped from a sanitation standpoint. This includes proper garbage and sewage disposal systems, fresh water and the control of mosquitoes, flies, and odors. It is imperative that from year to year more funds must be secured to carry this work forward, and this is considered one of the most important of the duties devolving upon the service in providing for its guests.

### ARCHEOLOGICAL WORK

General restoration and repair work on the historic and prehistoric ruins in the Aztec, Casa Grande, Chaco Canyon, Gran Quivira, and Pipe Spring National Monuments was carried on during the year with the funds available. This work was done under the general supervision of the superintendent of southwestern monuments.

While repairing the walls of the Casa Grande Ruin, a rare cache of turquoise mosaics was uncovered. Three pieces of mosaic were found, two of them in the form of birds and the third representing a turtle. The largest bird is the best preserved. This was made on a wooden core, with the mosaics placed in wax. Each bit of stone was worked out to a pyramidal shape and 492 stones used in the bird alone, which measures about  $4\frac{1}{2}$  inches from wing tip to wing tip. In making the turtle, the largest of the designs, 1,129 stones were used. With these mosaics were found a set of perfectly matched turquoise pendants and over 900 shell beads. The discovery of the mosaics is of remarkable scientific interest, for they show that the artisanship of the prehistoric peoples once inhabiting the Casa Grande was equal to any other southwestern culture, in fact closely approached that of modern times in beauty of design and workmanship.

The policy of repairing ruins already excavated, in preference to carrying on exploration work, was followed again in the Mesa Verde National Park during the year just ended. The park superintendent is a trained archeologist, and under his supervision the ruins were put in the best condition that has obtained for years. During the winter Spruce Tree House north refuse space was excavated with funds donated by an interested park friend. In the course of this work considerable interesting material was collected for the new museum.

The National Geographic Society continued its fifth year of exploration work at the Chaco Canyon National Monument under the direction of Neil M. Judd of the United States National Museum.

Work was continued on the Pueblo Bonito and Pueblo del Arroyo ruins under the permits granted the Geographic Society in 1921 and 1924 and in addition permission was given by the department last year for the society's representative to conduct archeological explorations at three small-house ruins on the public domain in the Chaco Canyon drainage in order to clarify certain archeological problems which developed in connection with the Pueblo Bonito and Pueblo del Arroyo explorations. This year's work completes the five-year exploration project of the National Geographic Society. During the course of the work evidence was secured that in the height of its usefulness Pueblo Bonito had 800 rooms and 32 kivas, and housed approximately 1,200 inhabitants. A valuable find here was a turquoise necklace in four strands, containing over 2,500 matched beads, estimated to be over 1,000 years old. Much other valuable material was brought to light, and will be exhibited in the museum of the National Geographic Society and the United States National Museum in Washington.

### EDUCATIONAL WORK IN THE PARKS

Nature study has a universal appeal, even when carried on only through the medium of books. The opportunities afforded in the national parks for such study among nature's own chosen conditions brought about a constantly increasing demand for intelligent interpretation of the various natural features in relation to their surroundings. Visitors to the parks want to understand more not only about the rock formations and the geologic history of the particular area in question, but about the trees, flowers, birds, and mammals, and the Indians who are inseparably connected with the historic atmosphere of the region. In fact, everything that is preserved in its natural state in the national parks is an object of intense interest to visitors, and a ready subject for study and explanation.

Recognizing this consistent demand, I have endeavored for the past six years gradually to develop opportunities in the parks for students and visitors, by direct contact with the handiwork of nature, to take an intensive course in natural history, and during the past year the results have been particularly gratifying.

Biologists, geologists, and other scientists, with their classes, have enthusiastically made use of the opportunities for research and investigation afforded in the national parks. Now, however, our efforts are directed toward making it practicable for the average visitor to the park without much time at his disposal for personal research work or without the necessary scientific background to work things out for himself to acquire a practical knowledge of the natural history and the other exhibits of natural phenomena.

Your approval of the educational plan I presented to you last April made possible the beginning of expansion of the educational work along well-defined lines. The chief park naturalist, who during the period of the construction of the Yosemite Museum acted as the agent of the American Association of Museums and during that time received no salary from the Government, was taken over on the service salary roll upon the completion of the museum building. He has been engaged during the summer in building up an educational division that coordinates the natural history work of the



A. ROAD ACROSS SWAN LAKE FLAT



B. NEW THUMB RANGER STATION  
YELLOWSTONE NATIONAL PARK





A. "POISON OAK" CAMPER IN FRONT OF NEW ADMINISTRATION BUILDING



B. NEW STANDARD CHECKING KIOSK BEING INSTALLED AT ALL CHECKING STATIONS



C. NEW YOSEMITE MUSEUM, GIFT OF LAURA SPELMAN ROCKEFELLER MEMORIAL

YOSEMITE NATIONAL PARK

various national parks. In the larger parks a few naturalists have been appointed who supervise the nature guiding, museum, and other educational features. These park naturalists report to the chief naturalist to whom the service has delegated the responsibility for the larger development of its educational program.

#### NATURE GUIDING

So far the development of the educational work of the National Park Service has proceeded along three closely allied lines. Of these the nature guide service inaugurated six years ago in Yosemite National Park is particularly important. Field trips are conducted by nature guides competent to explain every object of natural history observed along the trail. A year after the nature guide service was given its preliminary try out in Yosemite Park it was extended to the Yellowstone and still later was introduced in Glacier, Mount Rainier, Crater Lake, and Rocky Mountain National Parks. This year this service has been extended to Sequoia and Zion National Parks. In the Mesa Verde National Park personally conducted trips to the interesting archeological ruins take the place of the nature guide service, and this also holds true of some of the monuments, particularly in the Southwest, where ruins of historic or prehistoric interest are the main features. In the Yosemite National Park it is estimated that the nature guide service last year served two out of every three of the park's 209,166 visitors.

#### YOSEMITE FIELD SCHOOL OF NATURAL HISTORY

Two years ago it was stated that school teachers taking their vacations in the Yosemite were turning the nature guide service into a regular summer school, asking all kinds of questions concerning the natural history of the region. This year a real summer school was established, with the opening, on June 29, of the Yosemite Field School of Natural History for a seven weeks' intensive field course in natural history. Eighteen students, most of them teachers in the California grade schools, enrolled for the course, which was of university grade. The California Fish and Game Commission cooperated with the National Park Service in making this school possible, and no tuition or fees of any kind were charged.

The object in establishing this school was to make its work supplement the lower division university courses in botany and zoology, with the opportunity afforded for the study of the various living forms in the field. Every student had practice in teaching, leading parties afield, giving nature talks around the campfire, and writing nature notes.

This school was a logical outgrowth of the nature guide service.

#### LECTURES ON PARK SUBJECTS

Closely connected with the nature guide service is the giving of lectures on the history and natural features of the park. These lectures are given around the evening campfires, and also in the hotels and museums, and are very popular. Most of the staff en-



gaged in this lecture work, and also in nature guiding, are recruited from the staffs of colleges and other educational institutions.

#### MUSEUM EXPANSION

The newest phase of educational work in the parks is the museum service. As reported to you in my 1924 report, funds for a new Yosemite Museum were appropriated last year by the Laura Spelman Rockefeller Memorial, through the efforts of the American Association of Museums. During the past year work on the building was completed. The donation of funds for the construction and equipment of this museum, and its construction and equipment under the direction of the American Association of Museums, will mark a big step forward in the educational development of the park system. Since the completion of this structure it has been inspected by Dr. H. C. Bumpus, chairman of the subcommittee on buildings and plans of the committee on museums of the American Association of Museums. In addition to the \$70,500 appropriated for the Yosemite Museum by the Laura Spelman Rockefeller Memorial, another \$5,000 was made available by the memorial to cover the expenses of the committee on museums in making an investigation of the possibility of developing museums in the other national parks. Doctor Bumpus was appointed to make this investigation by the American Association of Museums, and made two inspection trips to the parks during the season. On his first trip he covered a number of the southern and western national parks and monuments, and on a later trip visited Yellowstone and Glacier National Parks.

In my 1924 annual report to you I also mentioned the donation of funds by Mrs. Stella Leviston of California for use in constructing one wing of the much-needed museum at Mesa Verde National Park. This wing was completed last spring, and with funds donated by another friend of the park several museum cases were purchased. The superintendent reports that a great deal of time was spent in mending and restoring broken pottery to as nearly as possible its original condition for exhibition in the museum.

It is not the policy of the service to establish elaborate museums in any of the national parks, or to have them considered "show" places. Rather, they are to be regarded as places to stimulate the interest of visitors in the things of the great outdoors by the presentation of exhibits telling in a clear, consecutive way, the story of the park from its geological beginning through all branches of history up to and including the coming of man and his works. All unnecessary or extraneous material is to be excluded. I believe that in this way the greatest amount of benefit can be derived from the park museums by the greatest number of people. The national parks themselves are the real museums of nature, and the park museum in each will simply serve as an index to the wonders that may be studied and enjoyed on the ground by the observant student of nature.

The collection of materials that can be presented in a simple, systematic way in order to tell the true story of the parks has been steadily going forward, even in the parks where no museum building exists. In Sequoia National Park the museum collections are housed in tents, but in spite of this the exhibits grow in number,



and much interest is shown by park visitors in assisting in gathering the material which later will serve as the nucleus for a real museum exhibit. Public interest in this movement has been so great that many contributions, either of funds for the purchase of specimens or of interesting objects having museum value, have been donated, and assurances have been given that when adequate fire-proof museum buildings have been provided in certain of the parks, valuable private collections will be either donated or lent for exhibition therein.

#### LIBRARIES ESTABLISHED IN PARK MUSEUMS

Books relating to the history, geology, and other scientific features of the region in which a particular park is located are being collected as rapidly as possible, and park libraries established in connection with the museums. I particularly want to commend the activities of Mrs. Nusbaum, wife of the superintendent of the Mesa Verde National Park, for her indefatigable efforts along this line. Through her personal efforts practically every museum in the country is cooperating with the park and sending for use in the park museum copies of all publications asked for, in most cases without any expense to the service.

#### BRANCH MUSEUMS

In connection with the plans for the construction of central museums in the major parks, consideration should be given to the establishment of small branch museums at points where some special features of natural history can best be demonstrated. Already the Sierra Club has made possible the establishment of one such branch, through the donation for one year of the Parsons Memorial Lodge at Tuolumne Meadows in Yosemite National Park, to be used as a branch of the main museum in the valley. In addition to donating the building to the park for this purpose, the Sierra Club has also appropriated \$150 to be used in defraying the salary of a nature guide to be stationed at this point. In order that the guide may be retained for full two months, the Yosemite Natural History Association has also donated \$90, to make up the full amount of salary for the two months' period. Another branch museum established in the park system is in Yellowstone National Park, near the large buffalo ranch. Here the headquarters of "Buffalo Jones," a famous hunter in the days when the buffalo ranged the plains in seemingly endless numbers, were repaired and one room set aside as a museum branch, and photographs and specimens relating to the life of "Buffalo Jones" and to the early history of the buffalo were placed on exhibition.

#### VISUAL EDUCATION

The visual educational work of the National Park Service apart from that provided through the museum and nature guide service in the parks, has been carried on mainly through the assistance of private individuals and organizations interested in promoting a knowledge of the national parks. During the past year a number of lecturers gave talks on park subjects illustrated by motion pictures and lantern slides, and in several cases the service was instrumental

in arranging for park lectures in the auditorium of the Interior Department Building for the public generally.

The service urgently needs an appropriation to provide an adequate supply of photographs, lantern slides, and motion-picture films for distribution. All material of this kind that we now have has been donated through the generosity of commercial photographers, railroads, and other park friends, and the supply is woefully inadequate to meet the demands made upon it. Formerly a distribution service of motion pictures and lantern slides was maintained, but the demand was so great that without funds for replenishing and maintaining it the material deteriorated and the general distribution service had to be discontinued. At present there are comparatively few slides and reels that can be lent for public use.

The visual education movement is steadily growing throughout the museums of the country and in this new method of teaching the national parks are strongly featured. In the visual education department of one scientific society and museum in a city of 545,000 inhabitants over 1,000,000 slides were loaned in a period of three years, as well as simple and effective projecting lanterns. In calling attention to these slides, the museum stresses the wonders of the national parks and invites people to "visit our great parks at home on winter evenings."

In another museum in a town of 492,000 inhabitants geological groups showing important features of the national parks and monuments are being prepared and exhibited and motion pictures used in connection with lectures, special exhibits, and school work. In its educational work this museum reached over a million and a quarter people in 1924.

In this way knowledge of the national parks is spread through the country to an amazing degree. The National Park Service, however, should have sufficient funds to do its share in making the parks known to the public generally through visual education methods. This was strongly stressed in a letter received by the service from the university extension division of a Western State university. The extension division, which requested the loan of national-park film for distribution in its work, already had 16 scenic films listed. Of these, five covered Canadian scenery and Canadian national parks, and three others were foreign. Not one film of a national park was contained in the list, although one of the best known of the national parks lay within the borders of the State. In spite of this it was impracticable for the service to lend the university a national-park film.

#### PARK LITERATURE

During the year the following editions of the rules and regulations were printed: Crater Lake National Park, 30,000; Glacier National Park, 30,000; Grand Canyon National Park, 35,000; Hot Springs National Park, 15,000; Lafayette National Park, 10,000; Lassen Volcanic National Park, 10,000; Mesa Verde National Park, 20,000; Mount Rainier National Park, 25,000; Rocky Mountain National Park, 30,000; Sequoia and General Grant National Parks, 35,000; Wind Cave National Park, 15,000; Yellowstone National Park, 50,000; Yosemite National Park, 50,000; and Zion National



Park, 10,000. In addition the Yellowstone Park Transportation Co. donated \$989 for 20,000 additional copies of the Yellowstone rules and regulations; the Medford (Oreg.) Chamber of Commerce donated \$146.41 for 5,000 additional copies of the Crater Lake rules and regulations; Mr. George D. Pratt of New York City donated \$250 to cover the cost of issuing a rules and regulations pamphlet on the Petrified Forest National Monument; and the Hawaii Tourist Bureau reprinted and issued about 100,000 copies of the Hawaii rules and regulations. A supply of these were sent direct to the service in Washington, and the remainder were distributed in Hawaii, both through the park office and through tourist agencies.

An edition of 55,202 copies of the Manual for Railroad Visitors, Yellowstone National Park, was printed. Motorists Guides for Rocky Mountain, Glacier, Mount Rainier, Crater Lake, and Sequoia and General Grant National Parks were also issued, for distribution in the respective parks. Editions of the Motorists Guides for Yellowstone and Yosemite printed late in the 1924 season were issued during the 1925 season.

A new edition of the pamphlet entitled "Glimpses of Our National Parks" was issued, 50,000 copies being printed. Manuscript for another publication, "Glimpses of Our National Monuments," was also prepared and submitted to the printer before the close of the fiscal year, but the pamphlet was not issued in time to be used during the summer travel season. These two publications fill a long-felt want. An edition of 1,800 copies of the Annual Report of the Director of the National Park Service for 1924 was also printed and distributed.

#### SALE OF PAY PUBLICATIONS CONTINUES HEAVY

The policy of placing on sale in the national parks supplies of special pamphlets sold through the office of the Superintendent of Documents was continued and the park superintendents report increased sales of these pamphlets. Receipts from all sales are turned over to the Superintendent of Documents. Supplies of topographic maps prepared and sold by the Geological Survey were also shipped to the parks and remittances for all sales of these maps were made direct to the Geological Survey by the park superintendents.

#### APPROPRIATIONS AND REVENUES

The regular appropriations for the National Park Service for the fiscal year ended June 30, 1925, totaled \$1,877,835. In addition, the deficiency act of December 5, 1924, which failed of passage at the close of the previous session in June of that year, carried appropriations of \$1,044,871. Of these funds a total of \$42,171 was for repairing damage to roads in Rocky Mountain, Mesa Verde, and Mount Rainier National Parks occasioned by storms that occurred in July, 1923. After the failure of the deficiency bill in June authority was granted by the Director of the Bureau of the Budget to make the necessary repairs to roads in Rocky Mountain and Mount Rainier Parks, using 1925 appropriations, with the understanding that the funds in the pending deficiency bill would be available for 1925 to replace the regular appropriations used in this repair work. Authority to so use these funds was granted by Congress in the de-



iciency act of March 4, 1925. Damage to the roads in Mesa Verde Park was repaired through transfer of funds from other parks under the 10 per cent clause, so that the deficiency appropriation of \$3,000 was not needed.

The act of December 6, 1924, making additional appropriations for the fiscal year 1925 to enable the heads of the several departments and independent establishments to adjust the rates of compensation of civilian employees in certain of the field services, appropriated \$102,122 for the National Park Service, making the total net appropriation for the fiscal year 1925 for the National Park Service \$3,021,828.

By application of the strictest economy in carrying out the operating program in the national parks for 1925, a saving of \$101,177.73 was made in the appropriations, which entitles the National Park Service to membership in the "Two Per Cent Club" organized by the Director of the Bureau of the Budget at the eighth regular meeting of the business organization of the Government, January 26, 1925.

The total appropriations for the current fiscal year amount to \$3,243,409. This includes a general item of \$25,000 appropriated by the deficiency act of January 20, 1925, for the investigation, control, and prevention of insect infestation in the forests of national parks. Previously funds for these purposes were granted individual parks, but when new or severe epidemics occurred requiring emergency control measures, general funds were not available. Therefore, individual items for the various parks were eliminated from the estimates for the regular 1925 appropriations, and a lump-sum appropriation requested. This item was not allowed in the regular appropriation act, but later, on showing, it was granted in the deficiency act above mentioned.

An item for emergency reconstruction and for fighting forest fires in national parks was continued by Congress in 1925 and again this year with authority to expend not to exceed \$40,000 annually for these purposes. This provision is a needed form of insurance protecting the regular park appropriations against unforeseen contingencies. Its benefit is conclusively proven by the fact that it was necessary during 1925 to expend \$16,818.17 to repair damage caused by floods and storms and \$20,000 to fight forest fires. The most serious fires in 1925, which was an exceptionally bad year for forest fires throughout the West, occurred in Glacier, Yellowstone, and Yosemite National Parks.

Revenues derived from the operation of national parks during the fiscal year 1925 amounted to \$670,920.98. Practically two-thirds of the total revenues, or \$424,035.93, were derived from automobile and motor cycle license fees. About two-thirds of the total travel to the national parks came in private automobiles, so that the amount derived from automobile license fees in comparison with the total revenue is in about the same ratio as automobile travel and total park travel. In return for the fee, in addition to the use of the park roads, the motorists receive, without further charge, use of camp sites in the public camp grounds in which sanitary facilities have been developed at large Federal expense, and where pure water and wood for camp fires are made available. The following table illustrates the increase in the number of visitors and revenues, and the

increase in annual appropriations granted by Congress since the creation of the National Park Service.

Year	Visitors, parks, and monu- ments	Auto- mobiles	Revenues <sup>1</sup>	Appro- priations
1917.....	488, 268	54, 692	\$180, 652. 30	\$537, 366. 67
1918.....	451, 661	53, 966	217, 330. 55	530, 680. 00
1919.....	811, 516	97, 721	196, 678. 03	963, 105. 00
1920.....	1, 058, 455	128, 074	316, 877. 96	907, 070. 76
1921.....	1, 171, 797	175, 825	396, 928. 27	1, 058, 969. 16
1922.....	1, 216, 490	197, 105	432, 964. 89	1, 433, 220. 00
1923.....	1, 493, 712	271, 482	513, 706. 36	1, 446, 520. 00
1924.....	1, 670, 908	315, 916	663, 886. 32	1, 822, 730. 00
1925.....			670, 920. 98	3, 021, 828. 00
1926.....				3, 243, 409. 00

<sup>1</sup> After July 1, 1918, all revenues except those of Hot Springs were covered into the miscellaneous receipts of the Treasury. Before that time they were available for park development. After July 1, 1922, revenues from Hot Springs are covered into the Treasury and are no longer available for development of the park.

### ROAD-BUDGET PLANS

One million dollars, the first installment of road-budget funds authorized to be appropriated by the act of April 9, 1924, approving a three-year road program in the national parks, was appropriated by the deficiency act of December 5. These funds were made available for expenditure until July 1, 1925. This gave the service only a little over six months to get work started and under contract. With the need of suddenly expanding the civil engineering forces, it soon became apparent that difficulty would be experienced, as competent road engineers with civil-service status were not easy to secure. It developed that there was keen competition for the services of experienced engineers between the highway departments in the various States, where engineers command larger salaries than those established by Federal classification for engineering positions. However, through cooperative plans that were effected by the Bureau of Public Roads of the Department of Agriculture, that bureau, through its permanent, trained engineering staff, has enabled the service to push its road program forward on a sound basis. On the advice of that bureau, some of the tentative plans drawn up for national-park roads were discarded, having been found below the standards of gradient and width of roads being constructed by the States and by the Federal Government.

With the approval of members of the Appropriations Committee, radical changes were made in the original park-road plans to bring them up to the highest standards to which experience has shown permanent automobile roads should be constructed. I became convinced that the construction of roads in national parks on low standards, when the park roads would have to bear the concentrated traffic of the approach roads, would be a waste of public funds.

The Interior Department appropriation act of March 3, 1925, carried an additional \$1,500,000 for road construction, with authority for you to incur obligations and enter into contracts for additional road work at a total cost not exceeding \$1,000,000. The new road funds also became immediately available, and added impetus was given the park road program. The authority to obligate has



been utilized, contracts having been entered into up to the present writing covering additional work to be done to the extent of \$981,000, to be paid for from future appropriations. This provision has been exceeding beneficial, in that it has been possible to let larger contracts, with consequent saving to the Government in unit costs. To a great extent park road work has been contracted for, it having been found advisable to construct only a few projects directly by force account. Our park engineers handling this portion of the work will enable the service to check closely fair contract prices.

With the change to higher road standards it will not be possible to complete the program of work presented to the Committee on Public Lands in hearings that were held by that committee in the Sixty-eighth Congress, first session, on the bill authorizing the three-year road program. The tentative allocation of road funds to national parks will, however, be closely maintained. Further congressional authority must be obtained in order that future appropriations may be authorized to complete adequate road systems in each of the national parks. With the continued cooperation of the Bureau of Public Roads, the park road program is assured of going forward on a high plane, with roads built for permanency at the lowest possible costs.

#### ATTENTION GIVEN TO PRESERVATION OF SCENERY

The landscape division of the park has been confronted with greatly increased problems during the past year due to the road development program under way in many of the parks. To this division has fallen the task of properly fitting these road developments into the landscape with the least marring of the native beauty. This work has been done in cooperation with the Bureau of Public Roads and with our own park engineers and the results already obtained attest to the careful thought which has been given to the work.

Along with the harmonizing of roads and bridges with their surroundings has come the work of locating and designing Government structures which have been required to serve the public.

The report of Landscape Engineer Daniel R. Hull found in Appendix C bears on various needs of the future which should be borne in mind, and I wish to emphasize particularly the need of higher standards in building construction. The present limit of \$1,500 established by Congress as the maximum which can be spent on any Government-owned structure in the parks without special legislation should be changed to twice that amount, or better still, waived entirely, on the assumption that those administering the parks will understand the individual needs and plan toward that end.

Another point stressed in Mr. Hull's report is the need for detailed surveys of occupied areas in the parks. These are necessary before we can plan adequately for industrial areas, housing groups, and the various functions which must be accommodated in connection with the parks' administration.

#### GENEROSITY OF PARK FRIENDS

At the close of another year I have to report many donations of money and objects of interest to the National Park Service by generous friends.



Superintendent Dorr conveyed to the United States Government, for incorporation in Lafayette National Park, 4.29 acres of land giving access from the public highway to the Champlain Mountain section. Part of this land was donated direct to the Government, and part of it through the Wild Gardens of Acadia. Another tract of nearly 17 acres will be donated to the Government by Mr. Dorr as soon as certain complications in connection with the deed can be straightened out.

Mention has been made elsewhere of the loan by the Sierra Club of California of the Parsons Memorial Lodge in Yosemite National Park to be used as a branch museum during the season. In connection with this the Sierra Club also donated \$150, and the Yosemite Natural History Association \$90 to pay the salary of a nature guide to be stationed at this branch museum for two months during the period of heaviest travel.

An eastern visitor who became much interested in the new Mesa Verde Museum donated \$1,500 for the purchase of museum cases, and funds were also furnished from private sources for museum equipment in the Yosemite.

Another donation of funds to Mesa Verde Park made possible the carrying on of some important archeological work. Still another gift to that park consisted of 10 original water color paintings executed by the Pueblo Indians of the Southwest, which are valued at above \$500.

Mrs. Stella Leviston, who made possible the first wing of the Mesa Verde Museum, during the past year gave \$200 toward the Giant Forest Museum fund in Sequoia National Park.

An interested park visitor donated \$10,500 during the year to be expended in cleaning up the dead and down timber and stumps along the roadsides in Yellowstone National Park.

The donation of a right of way through his power plant property by F. O. Stanley of Estes Park made possible considerable improvement in the road leading to one of Rocky Mountain National Park's public camp grounds.

Gifts of pottery and other artifacts were made to the Casa Grande Monument.

The Hawaii Tourist Bureau again provided for the issuing of Hawaii rules and regulations pamphlets for distribution to the traveling public, about 100,000 copies of this being printed.

The Yellowstone Park Transportation Co. made \$989 available to cover the cost of printing 20,000 Yellowstone rules and regulations pamphlets.

The Medford Chamber of Commerce donated \$146.41 to cover the cost of 5,000 copies of the Crater Lake rules and regulations pamphlets for general distribution.

Mr. George D. Pratt of New York, after a visit to the Petrified Forest National Monument, became so interested in the area that he donated \$250 to cover the cost of issuing 10,000 copies of a rules and regulations pamphlet for the monument.

Donations of books from practically every museum in the country, as well as from other sources, were made to the Mesa Verde Museum, and many valuable books were also given the Yosemite Museum, together with a valuable collection of Sierra Indian baskets.

It is impracticable to list in detail, because of lack of space, each gift received in the various parks. All of them, however, and the generous spirit that prompted them, are highly appreciated, and the fullest possible use will be made of them.

### **DEFINITE ORGANIZATION OF NATIONAL CONFERENCE ON STATE PARKS**

The past year saw the efforts of the many State park enthusiasts rewarded when the National Conference on State Parks was put on a definite business basis. Through the interest of the President's Conference on Outdoor Recreation funds were obtained for the permanent organization of the conference, as one of the five organizations forming the Federated Societies on Planning and Parks. None of the component units of the federated societies has lost its name, identity, organization, or personnel, but all of them cooperate to give the most effective service to communities and individuals interested in their allied activities.

Great credit is due those who devoted so much of their personal energy, time, and funds in furthering the State park work from the time the first national conference was held in Des Moines in 1921, until last March, when the financial organization was accomplished. Rapid forward strides have been made in expanding and unifying the park systems in the various States in the past five years, and much greater results are anticipated from now on.

### **FIFTH NATIONAL CONFERENCE ON STATE PARKS**

The Fifth Annual Conference on State Parks was held at Skyland, Va., in the heart of the proposed Shenandoah National Park, May 25 to 28. This was the most successful conference yet held, delegates being present from every State in the Union. At the time the first conference was held there was very little general interest in State parks, but with each succeeding conference interest has spread until now the State park campaign is one of the most popular conservation movements of the day. Michigan alone has 53 State parks within her boundaries, Texas has 52, and other States are not far behind. At this rate it will not be so very long before the slogan of the conference, "A State park every hundred miles," becomes an accomplished fact.

### **DUTIES IMPOSED BY MEMBERSHIP IN NATIONAL CAPITAL PARK COMMISSION AND OTHER FEDERAL ORGANIZATIONS**

My duties as a member of the National Capital Park Commission, created last year by act of Congress and mentioned in the 1924 report, involved attendance at numerous meetings and personal inspection of various areas suggested as additions to the District park system, and took up quite a large amount of time. In my absence Assistant Director Cammerer followed up this work, and in addition he is a member of the advisory committee to the commission.

Participation in the National Conference on Outdoor Recreation required considerable time of the director and assistant director, the latter being chairman of the public lands administration committee of the President's committee.



## THE YEAR IN THE PARKS

The following is a summary of the work accomplished in the national parks and national monuments during the past year. This summary is purposely made brief, as the annual reports of the various superintendents have been printed in full in Appendix C.

### YELLOWSTONE NATIONAL PARK, WYO.

Yellowstone Park was opened formally on June 18, 1925, with appropriate ceremonies at the western entrance, the park terminus of the Union Pacific Railroad. Four governors participated in these ceremonies. These were Gov. Nellie T. Ross, of Wyoming, Gov. J. E. Erickson, of Montana, Gov. C. C. Moore, of Idaho, and Gov. George H. Dern, of Utah. Bannock and Shoshone Indians, rangers, pack outfits, stage coaches, and busses all contributed color, romance, and historic background to the occasion.

The 1925 season was thus opened after a very unusual winter and spring. A stormy autumn was followed by an almost unprecedented cold wave in December. Then came a long period of mild weather with heavy snows in some sections and light snowfall in others. The spring was rainy, and the weather sufficiently cold to retard snow melting which made the opening of the high passes difficult and expensive. The summer was unusually rainy, but in middle July there was a period of intense heat with lack of moisture.

Fortunately, the winter weather was not particularly hard on the wild life of the park, and losses through starvation, which were few, were confined to the elk. Antelope flourished and they now number well over 400, not counting the increase of the current year. Deer, moose, bighorn sheep, and buffalo increased normally. Both grizzly and black bears appeared to be more numerous than last year. One evening near the Canyon Hotel, 27 grizzlies were in sight at one time. The Yellowstone bears are apparently as interesting to the park visitor as the geysers and other phenomena of this great natural museum.

### THE BUFFALO JONES MUSEUM AND ZOO

An interesting development of the year in the Yellowstone, was the establishment of the little museum, relating primarily to buffalo, in the old log cabin built by the famous "Buffalo Jones" over 20 years ago, when he was in charge of the newly acquired band of bison, which is now the magnificent Lamar Valley herd of almost 800 animals. In this little museum there has been assembled a very interesting collection of pictures of buffalo herds, hide and meat hunting expeditions, buffalo hunters, bison heads, hides and horns, and much other material reminiscent of early days in the West.

Back of the old Buffalo Jones cabin a zoo has been built, and it now houses four very tame bears, a badger, several coyotes, a pet buffalo calf, and a number of different species of birds. During the summer, 12 fine buffalo from the Lamar Valley herd were kept there on exhibition. This museum and zoo were visited by over 50,000 people during the summer.



## BUFFALO PLAINS WEEK

A colorful pageant took place near the buffalo ranch in the Lamar River Valley from August 30 to September 6, when a western frontier round-up celebration was staged every day. The tame buffalo herd of over 700 animals, a score or more of Crow Indians from the near-by reservation dressed in the regalia and war paints of other days, and a few real western cowboys made the round-up a thrilling representation of the old days of the West. Visitors to the ranch during "buffalo plains week," as it was called, were taken from the ranch headquarters to the site of the round-up in the stage-coaches of former days, drawn by four and six horses. The Indian camps were of great interest to visitors. Typical camps with their tepees, open fires, travois, and handiwork of the tribe, and peopled with braves, squaws, and papooses, were a vivid reminder of the fact that not so many years ago the ancestors of these very Indians roamed and hunted over the lands in this vicinity.

## GENERAL EDUCATIONAL AND MUSEUM ACTIVITY

The main museum at Mammoth Hot Springs headquarters was expanded considerably during the year, especially after its administration was reorganized by the superintendent and Mr. J. E. Haynes was made its acting director. Mr. Haynes, who has been in Yellowstone National Park each year since early childhood, and who has been active in exploring every corner of the park, is serving without pay and devoting a large part of his time to the advancement of the interests of the museum. I feel that we are unusually fortunate in securing Mr. Haynes' public-spirited services, and he is worthy of highest commendation for his unselfish work.

During the summer, Chief Park Naturalist Ansel F. Hall made a comprehensive study of the educational activities and requirements of Yellowstone National Park. In this he was aided by Dr. Frank R. Oastler, of New York, who has been giving freely of his time in getting a comprehensive knowledge of the educational requirements and opportunities of the national parks and national monuments. In early September Dr. Herman C. Bumpus, the chairman of the executive committee of the committee on museums in national parks of the American Association of Museums, visited Yellowstone National Park and in company with Mr. Haynes made a thorough study of the needs of the park museum and the other requirements of the park along the lines of educational equipment and other facilities, together with buildings, for carrying on natural history study and information service in such a way as to interest and attract park visitors to this work and thus enhance the pleasure and benefit of their park tour.

From every standpoint, therefore, the educational work of Yellowstone Park has been rapidly advanced and the prospects for a comprehensive museum development seem particularly favorable, which is in line with the hope I expressed at this point in my report of last year.

## IDEAL MEDICAL SERVICE

It was with a great deal of pleasure last year that I outlined the establishment of hospital service in Yellowstone Park under the efficient leadership of Dr. G. A. Windsor. This year the service

was extended to include all of the dispensaries throughout the park, the nurses at all hotels and camps being directly responsible to the surgeon. Also, the regular park physician was secured through Doctor Windsor and assisted him during the tourist season. I doubt if any more efficient medical service could possibly be established in a national park than this comprehensive and closely knit service of the Yellowstone. Doctor Windsor's great public spirit and deep interest in the park are largely responsible for the success of this medical service and I sincerely hope that he will find it possible to continue to have supervision of the health of this great park for many years to come. It should be noted, also, that he has developed a plan for winter medical service that is a great improvement over anything heretofore attempted. This will insure the happiness and contentment of the park organization which for many months is very much isolated from the outside world.

#### SANITATION AND PUBLIC CAMP GROUNDS

Working in accordance with a comprehensive program adopted several years ago camp ground improvement was continued this year on a considerable scale. The Fishing Bridge grounds, partly improved last year, were further extended before the opening of the 1925 season and were placed in extremely attractive condition. A new automobile camp ground was laid out at the West Thumb, supplied with water from Duck Lake and equipped with a comprehensive sewer system and comfort stations, tables, water lines, and roads. The comfort stations will be available both for campers and visitors using the transportation line.

Further improvements were also made in the Old Faithful, Tower Falls, and in Mammoth Hot Springs camp grounds. It is estimated that over 90,000 people used the various automobile camp grounds of the park.

The United States Public Health Service extended its customary cooperation in the supervision of the health of the park, the planning of sewers and sewage disposal plants, the extension of mosquito control and the testing of water and milk to insure absolute purity of these commodities. Chief Sanitary Engineer H. B. Hommon, of the United States Public Health Service, also cooperated with the chief landscape engineer of the National Park Service in planning and building a spring effect using large rocks for Apollinaris Spring. This development is one of the most attractive pieces of landscape work as well as one of the most important items in sanitation in a national park that has yet been undertaken.

#### GENERAL LANDSCAPE IMPROVEMENT

In addition to the development of Apollinaris Spring considerable other landscape work of importance was undertaken during the year in Yellowstone Park. A new snowshoe cabin, which may also be used as a summer ranger station, was designed by the landscape engineer and built by rangers at West Thumb. This pleasing structure brought forth much favorable comment from visitors to the park during the summer. Several vistas were cut under the supervision of the landscape engineer and he also laid out the course



of the new telephone line that is being constructed between Norris Junction and the Lake Hotel, this being a continuation of the project begun last year. One must see the roads of Yellowstone with the unsightly telephone lines removed to appreciate fully what a tremendously fine piece of landscape work this new telephone construction is. By the end of this year the roads will be clear of telephone lines all the way from headquarters to the Lake Hotel and from Fountain Ranger Station to Old Faithful Inn. The connecting link between Norris Junction and the Fountain Station will be built next year.

#### CLEANING OF THE ROADSIDES

The most important landscape work of the park was the cleaning up of the roadsides. This activity has been authorized by an eastern friend of the park system who visited the Yellowstone last year, and as a result of his personal observations developed a plan of action that he has authorized us to carry out at his expense. Already the roads have been cleaned from headquarters at Mammoth Hot Springs to beyond the Apollinaris Spring, and the interested friend has provided funds for continuing this work to Norris Geyser Basin. The need of roadside cleaning in Yellowstone Park interested me the first time I visited this park, early in the season of 1915. At that time I sought to have an estimate made of the probable cost of this work. It seemed, however, as if this was a project that would not be likely to be undertaken by the Government for many years to come, if ever. Hence, after two or three years of casual discussion of the need of this work, I dropped it. It was with great pleasure, therefore, that I received word of the interest of this man, who had so much public spirit and keen appreciation of the wilderness charm of our mountain parks as to come forward with the means of doing this important work. I inspected the work done last autumn and found the roadsides as cleaned even more interesting and attractive than I had dreamed they would be.

#### INSECT INFESTATIONS AND GENERAL FOREST CONDITIONS

Closely related to our task of preserving the landscape of the park is the necessity we have recently faced for attacking several insect infestations in the forests. These threaten to destroy several miles of timber along the roadsides near the western entrance and in the vicinity of Camp Roosevelt. Under the special appropriation granted by Congress for the control of insects, the lodgepole pine forests along the west approach road were again sprayed, and it is believed that this timber did not suffer further injury this year.

As to the spruce budworm, which is defoliating the spruce and Douglas fir timber, in the Hellroaring and Crescent Hill areas, this insect was not so active this year and did not quite reach the road. Preparations were made for spraying the timber along the road had the deadly budworm advanced that far.

Successful attacks have also been made on several infestations of bark beetles.

The Bureau of Entomology cooperated closely in this work, and throughout the summer kept one of its most skillful specialists at work on the various control problems.



## IMPROVEMENTS IN PUBLIC UTILITIES

Following out our general program of extension of facilities, all of Yellowstone's public utilities expended large sums in new buildings, extensions of old structures, and in the purchase and installation of new equipment.

The most conspicuous improvement of the year was the erection by the Yellowstone Park Camps Co. of an enormous building in connection with its canyon permanent camp to house a lobby, curio store, writing rooms, office, dispensary, and other important facilities. At the present time this company is engaged in the construction of two large wings to its present central building in the Lake Permanent camp, these wings to include new dining rooms, amusement hall, and baths. In all of the camps more cabins and tents were constructed.

The Yellowstone Park Hotel Co. continued the improvement of its hotels, expending large sums in the painting of the Canyon Hotel and the reconstructing and painting of the roof of Old Faithful Inn. Many interior improvements were made.

The Yellowstone Park Transportation Co. suffered a disastrous fire on March 30, 1925, 53 busses and 35 touring cars and trucks being destroyed, together with valuable machine shops and an enormous quantity of spare parts and other supplies and equipment. The company promptly ordered 90 new busses and 10 new trucks, which were delivered before June 1. This remarkable performance resulted in giving the transportation line more facilities for the opening of the season than it would have had had the fire not occurred. The officers of the company are to be commended for their courage and vigorous action in making the great expenditures necessary to completely reestablish the transportation facilities in time for the accommodation of park visitors. The company is continuing the construction of its machine shops at Gardiner and these will shortly be completed. The big storage garage built to house its busses has already been completed. All of the buildings are of steel and concrete and as near fireproof as it is possible to make any building.

There has not been so much expansion of store and studio facilities as recorded last year for Yellowstone Park, but important expansions have been made nevertheless. The Park Curio Store at Mammoth Hot Springs has been nearly doubled in capacity and a store and delicatessen building was erected in the Mammoth Hot Springs automobile camp by George Whittaker, one of the park merchants, and the owners of the Park Curio Shop acting jointly. Mr. Whittaker also added a large wing to his Canyon store to house a lunch counter and delicatessen.

The Yellowstone Park Camps Co. improved their restaurant and lunch counter facilities in the camp grounds at Old Faithful and Fishing Bridge and established a new lunch room in the store at the Canyon.

C. A. Hamilton also continued improvements of his stores, particularly concentrating on his Fishing Bridge store, which he doubled in size.

J. E. Haynes, the official photographer, was active in extending his lines of negatives of park scenes and bringing out new subjects

in pictures, postcards, and books. With his especially equipped boat he made several very interesting explorations.

#### YELLOWSTONE SERVES WELL

All of the Government activities of the Yellowstone were carried on efficiently and both the department and the service received many comments on the hospitable, courteous, and interested service afforded visitors. This is particularly gratifying in view of the fact that there was an increase of more than 10,000 visitors over those of last year. We must also consider the fact that the season was unusually stormy, presenting difficulties in the way of caring for the roads and public camp grounds that were not easy to solve. In general the roads and trails were in splendid condition and were well maintained throughout the year. The use of Ford trucks in cleaning camp grounds greatly increased the efficiency of the clean-up squad so that at the end of the summer the park was almost devoid of seasonal debris of any kind.

#### YOSEMITE NATIONAL PARK, CALIF.

The serious drought conditions of 1924, combined with the hoof-and-mouth epidemic which became general among the livestock throughout the greater part of California and eventually attacked the deer, brought about a business depression not only in California, but throughout the Pacific Coast States which was reflected in material falling off in park travel during that year.

The winter and spring of 1925, however, brought a precipitation considerably in excess of normal, thereby ending the drought and assuring a satisfactory water supply for 1925. The hoof-and-mouth disease among the domestic livestock was also completely suppressed. Natural conditions in the park during the season were never better, travel to the park exceeded all previous records, and the operators of public utilities experienced a more prosperous season than ever before in the park's history.

While the hoof-and-mouth epidemic among the deer continued to be extremely serious even after the heavy travel season began, close cooperation between this service and the bureaus of the Department of Agriculture in charge of the control measures, resulted in the evident complete eradication of the disease by the end of the season. It is confidently expected that the last deer has been killed and that this scourge, which promised at one time complete elimination of deer life in the northern part of the park, is now to be a thing of the past.

#### NEW ADMINISTRATIVE CENTER

Excellent progress was made on the development of the new administrative center during the year, there having been erected and either occupied or made ready for occupation, a new park administration building, a new post office, a new museum, and three studios erected by A. C. Pillsbury, H. C. Best, and D. J. Foley, under their authorizations to conduct photographic businesses in the park.

All of these buildings are built strictly in accordance with plans approved by the service and are of a character to fit in harmoniously



A. OPENING FALL RIVER ROAD BY REMOVING SNOW WITH STEAM SHOVEL



B. NEW KITCHEN AND MESS HOUSE AT UTILITY SITE  
ROCKY MOUNTAIN NATIONAL PARK





SECTION OF COOL, WELL-SHADED CAMP GROUNDS  
ZION NATIONAL PARK



CURVE ON NEW ROAD TO GIANT FOREST  
SEQUOIA NATIONAL PARK

with the natural surroundings. It gives an air of permanency and progress to the administration of the park in contrast to the atmosphere of dilapidation and ruin presented in the old village, which will gradually pass out of existence as the new unit is occupied.

#### CONSOLIDATION OF PUBLIC UTILITIES

With your approval the operations of the Yosemite National Park Co. and the Curry Camping Co. were consolidated under one head. Already this consolidation has brought about a condition of harmony that has never existed before in the park and it is confidently believed that it will enable the financing from private capital of the development of park accommodations and facilities on a scale that could never have been achieved under the old régime of the two competing concerns.

Already the erection of a much needed first-class hotel in Yosemite Valley has been approved and plans are being prepared for same. Coincident with, or immediately following, this construction will be the installation of suitable warehousing and cold storage facilities for handling food and other supplies, and the erection of a general store in the new village, the development of a new and more extensive housekeeping camp unit, the moving of the present unsatisfactory stable unit to a more suitable location, and a fuller development of the high country operations in the way of a better organization of the hikers' camps operation.

#### ROAD PROGRAM

Under the three-year road program authorized by the act of April 9, 1924, it was proposed during that period to spend \$1,500,000 on the Yosemite road system. This program contemplated the paving of the roads on the floor of Yosemite Valley and the El Portal Road, in all approximately 29 miles, and merely the modification of the approximately 110 miles of existing mountain roads. A contract has been let for the paving work and this part of the program is now in progress. The increased interest being shown in the question of road improvement in the national parks, however, convinced me that it would be a mistake to attempt merely to improve the existing mountain roads. To meet modern travel conditions and the great increase in motor travel that is being experienced from year to year, only roads of a high standard should be built. I therefore ordered a discontinuation of reconstruction work that had been started on the Wawona Road and through arrangements with the Bureau of Public Roads have had surveys started on the mountain roads with a view to reconstructing them on a high standard of grade and alignment. It is my intention that wherever money is spent on the mountain roads it will be expended only for first-class highways.

The State of California is making rapid progress on the all-year Yosemite highway which will connect with the park-road system at El Portal. Less than 8 miles of road now remains to be built to connect the two systems. It is estimated that this road will be completed and ready for travel not later than the autumn of 1926. This will mean an influx of travel into Yosemite far beyond anything the



park has heretofore experienced and will bring with it a greater demand than ever for correspondingly good roads within the park.

#### CONSPICUOUS IMPROVEMENTS OF THE YEAR

During the year the following improvements were completed, in addition to progress made in the administrative center:

1. The final extension of the sewer system which has been under construction for the past several years was completed. All operating units in Yosemite Valley are now served by a modern comprehensive sewer system by which all sewage is treated through septic tanks, filtration beds, and chlorination so that all possibility of pollution of the water courses has been eliminated.

2. With the completion of a dam and intake in Illilouette Creek, Yosemite Valley is now supplied with a pure-water supply for domestic purposes under sufficient head to insure adequate fire protection, which is distributed through an extensive distribution system to all operating units in the valley, including the public camp grounds.

3. A trail through the Grand Canyon of the Tuolumne, past the Muir Gorge, connecting Pate Valley with the previously existing trail to the Waterwheel Falls, was completed. The finishing of this difficult piece of trail construction now allows through trail travel from Tuolumne Meadows to Pate Valley and from there to Yosemite Valley and to Benson Lake and the northern part of the park, the latter area having heretofore been accessible only by long circuitous routes.

4. The installation of a modern common battery switchboard in the new administration building permits more efficient telephone connection with points outside of the park, and the building of 35 miles of additional telephone lines to outpost stations within the park now gives administrative headquarters telephonic connection with the principal outpost stations of the park, facilitating administrative problems of the park and greatly increasing fire control.

5. A three-unit garbage incinerator was constructed and put in operation during the year, permitting the discontinuation of the unsatisfactory method of open-pit garbage burning which the park has been compelled to follow in the past.

6. The erection of new ranger stations and the installation of public comfort stations at Alder Creek, El Capitan, and Tuolumne Meadows stations has greatly facilitated the checking of automobiles at these stations and provided much needed conveniences to the public.

#### GRAND CANYON NATIONAL PARK, ARIZ.

The year at Grand Canyon was especially successful, in that all travel records for previous years were broken and the long deferred development program begun. There was an especially large increase in travel by motor. During several months of the year this travel exceeded travel by rail, which has not happened at any preceding time. With the opening of additional roads it is expected that motorists will far outnumber rail visitors. Autos were registered every month during the year, and every day after February



22. The total number of visitors to the canyon was 134,053, as compared with 108,256 in 1924.

The demand for camping sites was heavier than ever before. The present camp site was taxed to capacity.

#### GENERAL DEVELOPMENT PLAN UNDER WAY

A start has been made in carrying out the general development plan for Grand Canyon village adopted last year. Construction is now under way on the new power house and railroad wye. Work on these projects made it necessary to remove several unsightly residences on the railroad right of way and also the residence of the custodian of the Bright Angel Trail which is owned by Coconino County. These residences were moved to the new residence street and have been permanently located. The remaining residences will be moved to permanent locations next year.

Work on the new camp grounds is progressing satisfactorily and this site will be ready for use at the beginning of the next camping season. Through a cooperative arrangement with the Harvey Co. enough effluent for the operation of flush toilets will be reclaimed from the treatment tank of the sewage-disposal plant. A camp lodge with baths, reading and rest rooms, and delicatessen will also be provided, and free water and fuel will also be furnished.

Beginning July 1, free water was supplied to auto campers. This service is comparatively inexpensive. Previous to July 1 water had to be purchased from the Santa Fe Railway at the station. Aside from the inconvenience, auto campers as a rule do not have sufficient containers to carry the required amount of water a considerable distance. Even when it was explained that water was hauled 125 miles by the railroads, many campers protested against the charge.

The comprehensive sewage disposal system authorized at the last session of Congress will, when completed, solve the sanitation problem for many years to come, since it is designed to handle eight times the present volume. The latest type of activated sludge tank will be used. The effluent will be chlorinated and clarified and will be absolutely innocuous. The effluent will be used for operating flush toilets on new camp grounds, all public toilets, irrigation, etc. It will be a great satisfaction to replace the present antiquated system with a modern, sanitary layout.

#### ROAD AND TRAIL DEVELOPMENT

The outstanding project was the construction of the Yaki Point section of the Kaibab Trail, which was completed the middle of June. Entirely new standards were used in the construction of this trail, and all travelers over it have been enthusiastic over its safety, easy grades, and scenic location. That part of the Kaibab Trail in the Granite Gorge of Bright Angel Creek which was reconstructed is of the same type of construction as the Yaki Point section. I am hoping that funds can be made available later on for reconstructing all of the Kaibab Trail, including relocating that part of the trail leading to the North Rim in such a manner that the trail will be shortened approximately 6 miles. A first-class trail across the canyon is as much a part of the development of this park as modern

highways to the South and North Rim. I am looking forward to the time when all expense tickets may be purchased, including railroad transportation to the South Rim, mule transportation across the Canyon, automobile transportation through the Kaibab Forest and to Zion National Park, Bryce Canyon, and Cedar Breaks, and then northward to the railroad and on to one's destination.

The Bureau of Public Roads cooperated in locating 132 miles of roads and detailed an engineer who is now in charge of road construction.

Road construction along the rim is comparatively simple and inexpensive, and involves moving of very little material. For this reason it is difficult to handle this work by contract, especially in view of the comparatively small amount of work involved in the first year's program. It was therefore decided to do the work this year by force account, keeping accurate cost records in order that the fairness of future bids on road construction may be determined, taking into consideration the high freight rates to the canyon and the necessity of purchasing all water used at the railroad station and hauling it to the camps. An additional reason for doing this work by force account is the fact that it gave the National Park Service an opportunity to secure much needed equipment as an offset to the contractor's profit. This equipment will greatly lessen maintenance costs, and is available for future road construction.

#### OTHER CONSTRUCTION WORK

Three ranger cabins were built at strategic points on the South Rim, and water for these cabins, and for the use of the public, developed by the construction of cisterns. This eliminated the necessity of purchasing and hauling water. It is planned ultimately to develop water all over the park by this method.

Surveys have been completed for the installation of water development at Bright Angel Point, on the North Rim. This is the outstanding need of the entire park for next year. A ranger cabin, warehouse, barn, and machine shed have already been constructed here. The increase in travel to the North Rim makes it imperative that reasonable comforts and conveniences for visitors be established as soon as funds are available.

#### COMMUNITY HOUSE A GREAT SUCCESS

The community house constructed last year has proven a great success. Before beginning construction of this building it was apparent that the allotment of \$6,000 would not be sufficient to complete the building in every respect. It had been made a matter of record that Congress would not be asked for additional funds to complete this structure and it was finished through private donations.

In line with the policy of making life in the parks attractive to park employees and those of the operators, a large recreational field has been established near the residence area where all outdoor sports may be enjoyed. The field is so situated that it is completely screened from all tourist activities. All expense and labor in connection with the preparation of this field were furnished by residents of the community.

#### ALL-YEAR APPROACH ROAD NEEDED

At the referendum last fall the voters of Coconino County voted against the sale of the Bright Angel Trail for \$100,000, which was to have been used in the construction of an approach road to the park. The present outlook is that this action will delay the construction of such a road by the Government for several years. This is unfortunate, as until an all-year approach road has been built park travel will be curtailed.

#### TRACKS OF PREHISTORIC ANIMALS DISCOVERED

The discovery of the tracks of eight different kinds of animals in the Coconino sandstone along the Hermit Trail has been said by some scientists to be the most important scientific discovery of the last year. It is believed that many equally important scientific discoveries will be made in the future in the eroded rocks of the canyon.

#### ROCKY MOUNTAIN NATIONAL PARK, COLO.

The year in this park has seen continued development, and an increase and betterment in the service to the public.

#### TRAVEL

The total number of visitors reported shows an increase over the corresponding figure for recent years, and the actual count of travel (at three gateways for nine hours per day, for a three-months' period) shows an even larger increase, as compared with the corresponding figure for previous years. The season for this park is June 15-October 1, but there are hotels in the immediate vicinity of the park that are open throughout the year, and there is some travel over park roads during every month of the year.

#### UTILITY SITE

In 1923, a centrally located site for the grouping of utility buildings was secured, and with the four buildings that were completed during the past year at that location, there are now seven buildings in the group, each of which is filling a need that has long been felt. The development of this utility site has added greatly to the systematic handling of supplies and equipment, has facilitated the maintenance of motor equipment, and in many ways has improved the efficiency of maintenance and construction work of the park.

#### ROAD BUDGET WORK

With the passage of the three-year road program, there is definite assurance of a marked improvement in the condition of roads in the park. Surveys, under the direction of the engineering division, have been in progress during the summer, preparatory to advertising for bids and letting contracts for the work which is authorized under the 1926 appropriation. The improvement of certain portions of the Moraine Park Road is now in progress. The need for better roads in this park has been an urgent one, and the prospects are brighter at this time than they have ever been before.



### OTHER ROAD IMPROVEMENT

Under the 1925 appropriation for the park, a noticeable improvement has been made at certain points on the park roads. At the upper end of Horseshoe Park, the road went around a rocky point, on a narrow ledge. This point has been widened to permit cars to pass, and to secure visibility of approaching travel. At a higher elevation on the Fall River Road, two dangerously sharp rock curves have been widened, and made safe. A portable rock crushing plant has been purchased, and the surfacing of the eastern side of the Fall River Road has been begun. It is proposed to continue this work each year, as funds are available. The road at the Moraine Park hill was widened, to permit of passing travel, and the grade was improved. This road has heavy travel, and the dangerous condition that existed has been materially improved. A new road, with ample width and low grades, was constructed to serve the Aspenglen camp ground.

### BRIDGES

The first permanent bridge in the park was constructed during the past year, over Fall River, near the fish hatchery. The bridge has a roadway 20 feet in width, a clear span of 24 feet, and a waterway adequate for all previously recorded floods. The abutments, wing walls, and railing are of masonry construction, using native granite.

An 8-foot masonry arch culvert was constructed over Bighorn Creek, on the new road to Aspenglen camp ground. The roadway at this culvert is 20 feet in width.

### TRAILS

The trail to Longs Peak was reconstructed, in a new and more scenic location, from timber line to the Boulder Field. The trail was also extended for half a mile, to the center of the Boulder Field. The result of this work is not only that the ascent of Longs Peak may be made with less fatigue and with more interest, but also that the superlative views from the Keyhole, looking down into Glacier Gorge, and from the east edge of the Boulder Field, looking down toward Chasm Lake, are now much more readily accessible. An increased number of visitors have this year taken the trip to the Boulder Field over the new trail, and it offers a remarkably fine one-day trip.

### NEEDS OF THE PARK

The need for better roads will, it is hoped, be taken care of by the present road budget, and such further appropriations as may prove to be necessary.

Many of the present trails are unsatisfactory, and provision should be made for the improvement or reconstruction of the most important of existing trails. A few new trails are needed, to make accessible certain remarkably scenic portions of the park.

Additional buildings are needed for road camps, so that the men and teams may be properly cared for during the working season. There is much inclement weather, particularly early and late in the season, when tent camps are wholly inadequate. The tent camps

are not economical, because of their depreciation, and because of the cost of installation and removal each year.

This park is wholly deficient in housing accommodations for its employees. Suitable quarters are needed, in order that competent personnel may be retained in the service.

Shelter cabins are needed at several points in the park, the most urgent need being at the Boulder Field, on Longs Peak.

Two of the present camp grounds can not be opened to the public until they are provided with a water supply, sanitation, and other development, making them suitable for the use of automobile campers. The present camp grounds need improved sanitation and water supply.

### **MOUNT RAINIER NATIONAL PARK, WASH.**

The outstanding event of the year in Mount Rainier National Park was the starting of the development of a road system. Not only did local interest center on this important improvement but the many inquiries and expressions of satisfaction from visitors from all sections of the country that the national park was to be made more conveniently accessible emphasized the importance of this work.

#### **YEAR-ROUND PARK**

The second successful winter operation has thoroughly established Mount Rainier in the list of all-year playgrounds. Comfortable accommodations throughout the year, easy accessibility, and equipment for winter sports have popularized the winter vacation idea.

The benefit of a vacation in winter, as well as a change from daily routine during the summer, is becoming more apparent as modern living continues to speed up. Mount Rainier National Park in providing a winter playground will contribute to the healthful enjoyment of outdoor recreation to thousands of people.

#### **ROAD DEVELOPMENT**

Under the 3-year program work was started this year on improving the 21 miles of the Nisqually road in the south side of the park. Contract for the construction of five concrete and two rustic log bridges and several concrete culverts was let on August 1, and it is hoped to have three of the concrete bridges completed this fall. Engineering data are being prepared for letting a contract this fall for the improvement and surfacing of this road.

A survey party under the direction of the Bureau of Public Roads will complete the location work on the southern end of the west-side road in preparation for construction next season.

The Bureau of Public Roads is also surveying a route into Yakima Park in the northeastern section of the park and will have the necessary data ready for construction during the second development period.

#### **FREE PUBLIC CAMP GROUNDS**

Notwithstanding the opening of a new auto camp at Longmire and the extension of the Paradise auto camp to double its former capac-

ity, facilities are still far short of the demands. More motorists each year carry their equipment, and camp out, and this popular recreation should be encouraged in every possible way.

### EDUCATIONAL SERVICE

This park, like many of the other national parks, needs a suitable building for the display of natural-history objects and around which can be centered the information and educational activities, and which will serve as an index to the great museum outdoors—the park. With a park museum and nature guides available the enjoyment of the park can be tremendously increased.

### HOUSING PROBLEM STILL SERIOUS

No relief in the housing problem has been provided since last year's report. On the contrary, increased business requires an additional employee during the winter months who must be quartered in a tent, making a total of four families and two single men to be housed under canvas. If we are to expect to retain the service of efficient employees we must provide comfortable living conditions for them.

### GLACIER NATIONAL PARK, MONT.

This has been an unusual year in Glacier National Park in many ways. The months of July and August were extremely dry, and there were numerous forest fires, so that the dense smoke during August was the cause of many visitors leaving the park and others keeping away. During the past winter heavy snowfalls, severe blizzards, and cold weather made effective administration and protection almost impossible, both from the physical aspect of performing the work and the health of the employees. The administration and development of this park is probably more strongly affected by the elements of nature than any of the parks in the continental United States.

### SATISFACTORY ACCOMMODATIONS FOR VISITORS

The operators of the public utilities in the park handled visitors very efficiently during the past season. All hotels and cabin resorts were crowded to capacity, and a very much needed and popular addition to accommodation facilities was made by the Park Saddle Horse Co. in the establishment of temporary tent camps at Crossley Lake, in the Belly River country, on Flattop, and at the head of Waterton Lake. The numerous cabin accommodations furnished by persons owning land within the boundaries of the park to visitors desiring housekeeping arrangements helped materially to care for the visitors. This feature is becoming more and more popular and will have to be given serious consideration in the future development of hotel and camp accommodations.

The transportation facilities rendered excellent service and several large convention parties were handled with great efficiency by the Glacier Park Transportation Co. The Park Saddle Horse Co. maintained a sufficient number of horses to handle satisfactorily



their saddle-horse business, and gave very close supervision and inspection of the condition of their stock.

#### LARGE INCREASE IN TRAVEL

The travel to Glacier National Park increased more than 20 per cent over last year, a large part of this increase being rail travel. Numerous parties attending conventions on the western coast stopped in the park for one or more days. Park registration does not include those stopping at the hotels at the entrances to the park who did not actually enter its boundaries. Automobile travel did not increase as much as expected, owing to the fact that motorists were discouraged when they heard that Montana roads were not in good condition and that automobiles had to be shipped between Belton and Glacier Park. The total travel for the year was 40,063.

#### GUARDING AGAINST ACCIDENTS

One of our greatest concerns in the administration of the park is that of accidents to visitors. The greatest care is exercised over the handling of visitors by the transportation operators, but the problem is in the care of campers and hikers. This problem requires some serious thought as to just how far we can go in making and enforcing regulations for all visitors in order to protect the small percentage of those who do reckless things.

#### ROAD DEVELOPMENT

The principal development activities were the continuation of construction of the Transmountain Road over the Continental Divide at Logan Pass, and the beginning of construction of the Two Medicine Road. Arrangements have been completed whereby the Bureau of Public Roads and the State highway commission have taken over the relocation and reconstruction of the road from Divide Creek to St. Mary's Lake, and the road from Babb to the Canadian boundary, which are already under construction, and also the road from Glacier Park station to connect with the first road mentioned at Divide Creek. All of these roads, which are on the Blackfeet Indian Reservation, will be constructed according to the latest Bureau of Public Roads standards. This means a great saving to the National Park Service in maintenance, owing to the poor location and poor standards of construction of the old road.

#### FISH PROPAGATION

More than 2,000,000 eggs and fry were planted in the lakes and streams of the park. Wonderful success was experienced in the planting of eyed eggs in remote and barren waters of the park, and this method of stocking the lakes and streams is of great advantage. These eyed eggs are packed by men to the lakes and streams in places where it is impossible to take a horse. It is important that fish planting operations be extended in order that the park waters be sufficiently stocked to meet the demand of thousands of visitors annually.

## SERIOUS FOREST FIRES

Serious fires occurred in Glacier National Park during the year and a total of \$67,000 was expended in fighting them. The most disastrous of these was the Lake McDonald-Apgar Ridge fire. During the year several fire-fighting pumps were purchased at considerable expense, and it is the conviction of all who saw the operation of the pumps at this fire that they were the means of saving the entire Lake McDonald region from being devastated. They saved the heavy timber along the Belton-Lake McDonald road, the entire Apgar settlement, and no doubt kept the fire from spreading along both shores of the lake, as well as up the North Fork Road toward McGee Meadow. The method of fighting fire with these pumps is to control the flames until the fire can be trenched and then confine the activities of the pumps to burning snags and logs. It is necessary to trench after the pumps, as it takes an enormous amount of water to soak down far enough to prevent fire from burning underneath and breaking out again in dry timber. The value of fire-fighting pumps to parks having to cope with forest fires can not be overestimated.

## CRATER LAKE NATIONAL PARK, OREG.

Crater Lake National Park this year received the greatest impetus in its history through the undertaking of the road-improvement program. Because of the peculiar volcanic character of the soil in this park it was necessary to lay a hard surface road with a penetrated asphalt binder. This 16-foot dustless highway, together with reduction of grades and elimination of unnecessary curvatures, is generally commended by road experts as ideally suited to Crater Lake conditions. Without undue expenditure it is thought that all of the Crater Lake highway system, excepting the Rim Road, can be reconstructed on a 7 per cent maximum grade, which, with the greatly increased traction induced by hard surface, will make the entrance roads easily negotiable by ordinary cars.

Both the Klamath and Medford approach roads to the park have been well maintained. The Dalles-California Highway is still uncompleted and the 4.5-mile spur connecting our east entrance with this highway remains unimproved. I am looking forward with deep interest to the completion of both this highway and the Natron Cut-off of the Southern Pacific Railroad and its effect upon park travel and development. Until the influence of this development eastward is determined, we will undertake no considerable development in the park.

## A PROFITABLE YEAR

The year 1925 was a very successful one. It is especially pleasant to record there were no automobile accidents. There were no arrests for speeding or any other causes, demonstrating the degree to which the vast majority of visitors cooperate with our officers. There was only one fire of any seriousness and that one in the beetle-destroyed lodge-pole pine north of Pine Cone near the desert. Thanks to the interest of the State Legislature of Oregon, the park bears were given additional protection in three large counties which

nearly surround the park. Through the courtesy of the Oregon State Game Commission large plantings of suitable fingerlings were made in the lake and four heretofore sterile streams were planted with Eastern Brook and Lock Levin trout to be thrown open to sportsmen two or three years hence.

Insect control work was carried on by a representative of the Bureau of Entomology under an allotment of \$5 900 from the special fund for this purpose, and the beetle infestation brought under what is hoped to be complete control in all of the functional areas of the park.

For the third successive year it is my pleasure to report that this park maintains its self-supporting basis, its revenues having again exceeded by \$3,809.49 the regular park appropriation.

#### NEW RECORD FOR PARK TRAVEL

The travel record was again broken with a total of 65,018 visitors as compared with 64,312 visitors last year. Of this total, 98 per cent traveled in their own automobiles. For the first time in its history Crater Lake entertained guests from every State in the Union, as well as several foreign countries. This travel increase is the more noticeable because the 1925 season was five weeks shorter than the 1924 and there was some interference through road construction and detours.

#### SOME DEVELOPMENT NEEDED

Every indication points toward Crater Lake's continuing its consistent and progressive increase in travel. This park is not located near large centers of population so that its travel, while not spectacular, is almost entirely national in scope, as with such parks as Yellowstone and Glacier. Located as it is midway in the chain of Pacific coast parks, and already given a very fine approach road system, travel is certain to increase heavily with the completion of our road projects now in progress. To take care of this increase it will become immediately necessary to augment park facilities.

Camp grounds must be enlarged, sanitation amply provided for, and such facilities as telephone service, trails, and information service improved and the ranger force enlarged. The nightly overcrowding of the Rim Community House suggests the need for enlarging that important structure. I hope next year to include this park among those provided with a nature guide service and modest museum facilities. It is becoming apparent that public utilities within the park must be increased to meet the demands for better stores, some amusement features, and probably a group of tent houses for rent to a growing proportion of visitors who have come to expect this class of shelter which has been so successful in other national parks.

#### AN EARLIER SEASON DEMANDED

There is an insistent demand at Crater Lake for an earlier opening date. This park now opens officially on July 1, being the last of the parks outside of Alaska to open, although its snow problem is somewhat less difficult than in some other parks. It appears to be an established custom that the coast tourist stream is in fullest flow between Decoration Day and Labor Day, and thousands of Americans



coming from Yosemite or Mount Rainier resent being deprived of a visit to Crater Lake. The problem is simply one of the expenditure of from five to ten thousand dollars for a properly equipped steam shovel or other snow removal apparatus, and there is no question whatever that this expenditure will be returned at least twofold. It is hoped that Crater Lake's opening date may be set forward to June 20 next summer and that this date may subsequently be advanced as experimentation shows the way.

## SEQUOIA NATIONAL PARK, CALIF.

### ROAD CONSTRUCTION

The most important event in the big tree park during 1925 has been the construction of the first section of the Generals' Highway, 19 miles from park boundary to Giant Forest. The road was cut through on July 25, 1925, and rapid progress is being made on widening and improvement so that it may be ready for the 1926 travel season.

This new avenue to Giant Forest and the High Sierra country behind the big trees leads also to many new problems. The road up the Middle Fork is a maximum 8 per cent grade as compared with 17½ per cent on the old North Fork Road; it is 5 miles shorter and there will be only 11 miles of mountain driving from Hospital Rock to Giant Forest, as against 25 from Kaweah to Giant Forest on old road. Running time will be cut down by about an hour, so that Giant Forest will be within two or three hours from Exeter, Visalia and other valley towns and only a little more than three hours from Fresno. A heavy increase in travel may be expected and will continue through the greater part of the year, as the new road when finally surfaced may be kept open the year around.

### TRAVEL AND GENERAL DEVELOPMENT

The travel for 1925 season was 14,273 autos and 46,677 visitors, a gain of 35 per cent over 1924. It is interesting to note that the travel was divided into following percentages: Local (San Joaquin Valley), 15 per cent; northern California, 18 per cent; southern California, 50 per cent; other States and foreign, 17 per cent.

The sewer and water systems constructed at Giant Forest under 1924-25 appropriations are functioning well, but additional funds are needed for extensions to meet actual and prospective needs. Progress was made at permanent park headquarters, where a dormitory and warehouse buildings were put up and the organization improved.

### PROBABLE CHANGE OF CAMP SITE

A careful study will be made by the landscape and sanitary engineering divisions to select suitable locations for the large hotel and public auto-camp development that must now be undertaken. Before the complete organization of the National Park Service, Giant Forest, like Topsy, "just grew," and unfortunately the camps and hotel were located under the sequoias and beside the flowering meadows, which are the chief glory of this region and should be

preserved in their natural condition. This is difficult if not impossible when camps and hotel are placed under the big trees; damage naturally results to bark and floral growth, while the general visiting public finds areas of supreme natural beauty either barred off or spoiled by buildings or structures.

It may take several years to bring about a complete change of base, but if the recommendations of landscape and sanitary engineers are to that effect, the change should be made.

#### MUSEUM AND NATURE GUIDE SERVICE

Further progress was made in this work by Judge Walter Fry. Over 400 floral specimens are now mounted, as well as many of mammals and insects. A fireproof museum building is needed.

#### PROPOSED PARK EXTENSION

No action was taken upon S. 4095, the bill to enlarge Sequoia National Park by the addition of Mount Whitney and portions of the Kings and Kern River Canyons, before the close of the Sixty-eighth Congress. Both the National Park Service and the Forest Service are committed to the enlargement project, and I hope that when a bill for the park extension is introduced in the next Congress it will promptly receive favorable action.

#### GENERAL GRANT NATIONAL PARK, CALIF.

The progress of the park may be gauged by the 15 per cent increase in travel; 11,108 autos and 40,517 visitors entered as compared with 9,118 autos and 35,020 visitors in 1924. The new sewer and water systems were fortunately ready for the increase but seven comfort stations are not enough and additional facilities are needed.

When the Generals' Highway links the park by mountain road with Giant Forest there will be a vast increase of travel, particularly of national as distinct from the present largely local travel. Provision should be made for this prospective travel as well as for that which floods in increasingly every year by the fine county highways from Fresno and other valley towns.

The urgent needs of the park are still closer communication with park headquarters at Alder Creek in Sequoia Park together with construction of a dignified entrance and ranger quarters, a warehouse and workshop, enlargement of chief ranger's office and other minor construction. It is hoped to provide these in the program of the next two fiscal years.

#### MESA VERDE NATIONAL PARK, COLO.

Public interest in this comparatively isolated and unique national park, situated far from the main lines of rail and tourist traffic, is again attested by travel from every State in the Union, and from seven foreign countries. From the scenic standpoint, Mesa Verde is different from any other national park, and the scenic features of the area are not less important than the notable and well-preserved homes of the prehistoric American cliff dwellers.

Service to the public has been most satisfactory during the season, and visitors have been well cared for at all times. Although Mesa

Verde showed approximately a 30 per cent gain in attendance for the season, the gain was very seriously cut down by extremely wet weather from the middle of August on, just at the very height of the tourist season.

#### SERIOUS WATER PROBLEM

The water problem at Mesa Verde is a most serious one, and funds provided for additional development have not kept pace with the increased attendance. This year extremely bad weather in the latter part of August and early in September made roads so trying that but few entered the park during this time, thus preventing the closing of the park for lack of potable water.

#### ROADS AND TRAILS

The necessity of hard surfacing the park roads of Mesa Verde was never more apparent than during August and September of the present season, when scores of cars, coming for hundreds of miles to visit this area, could not make the first ascent of the Mesa. The road surface is composed of red soil, clay, disintegrated shale and blue gumbo, forming most excellent dry weather roads when compacted, but treacherous beyond words when wet. For three days this September, as in the past season, not a car could leave or enter the park. Following a heavy storm, the whole road system must be regraded, as dragging will not fill the hub-deep ruts.

Twelve thousand dollars was allotted from road budget funds for widening and reconstructing 10 miles of the park highway. The unit costs on this force account work under park forces was 50 to 100 per cent under the low bid received for the same type of excavation on the new construction projects. The bid was rejected and the superintendent instructed to expend the \$32,000 allotted for this work under force account. Ninety per cent of the road crew is composed of Navajo Indians from the Reservation in New Mexico and Arizona. The new construction work is about 30 per cent completed at this time.

#### GENERAL DEVELOPMENT

In the 15-year period before Superintendent Nusbaum was placed in charge of this park, practically nothing had been accomplished in the way of permanent development in the area. Fifty-five miles of very narrow one-way road, with a maximum grade of 26 per cent had been built, as well as a few miles of trail, and two small permanent buildings, costing in all \$2,200, had been erected at Spruce Tree Camp. We have abandoned 17 miles of the previously maintained roads, and with the completion of this year's work will, except for a few short sections, have a 21-foot dirt road, with a maximum grade of nine per cent from the park boundary to Spruce Tree Camp. New trails have been completed. Superintendent and Mrs. Nusbaum submitted to the service a most complete and unique plan of development for Spruce Tree Camp, the park headquarters, covering the general layout, the type of buildings to be erected, and submitted sketches, designs, etc., for the present and future



development of the area. The landscape engineering division approved the plan of development and each year as funds are available and there is an excess of water over the needs of the camp and park visitors, one or two new units are completed. In Mesa Verde, the National Park Service has the beginning of what will prove to be one of its most unique and attractive developments, thoroughly in keeping with the nature of the environment.

#### NEW BUILDINGS

Water, above the needs of visitors, operators, and park personnel, was finally gained to complete the new park museum building late last fall, and early this spring there was sufficient to complete the new quarters for unmarried rangers. These two units, constructed in the Pueblo Indian style of architecture in conformity with the approved development of the headquarters group, have been furnished in part in the early Franciscan Mission style by the superintendent and the two permanent rangers who devote part of their time to this work in the closed park season.

The four hogans which were built by the Navajo Indians on the rim of Spruce Canyon serve as living quarters for the Indians employed at the camp, and also present a most instructive exhibit of Navajo home building.

The completion of a mess hall and a bunk house in the industrial group for the housing and feeding of general employees has resulted in economy of operation and contentment of employees who heretofore had the sky for a roof and cooked for themselves.

#### GIFTS

One of the most gratifying indications of the interest of visitors in the work of the National Park Service, is reflected in the help which is extended to the park and the United States in furthering activities that congressional appropriations do not cover. Mesa Verde has been particularly fortunate in the friends that it has made. With the exception of five museum cases and a major portion of the archeological collection, the Mesa Verde has its friends to thank for its fine large museum building, the furniture and fixtures and pictures therein, the acquisition of valuable archeological, ethnological, and historical records and exhibits, the large scientific reference library, and even funds to cover excavation projects that more material may be secured for exhibit. The voluntarily supported first-aid tent maintained at headquarters for the convenience of visitors and injured employees has more than supported itself. Financial assistance has been extended in helping defray the expenses involved in producing the wonderful ceremonial Indian plays. The value of gifts to this park alone in the past four years is more than Congress appropriated for its maintenance and improvement four years ago.

#### CEREMONIAL INDIAN PLAYS

I wish particularly to commend the wonderful educational work that Mrs. Nusbaum has been doing at Mesa Verde. In order that

visitors may get an intimate insight into the life and ways of the ancient cliff dwellers, she has studied and brought together in a scientific way a story of the ancient cliff dwellers, based on tradition, folklore, present-day sacred ceremonies, and archeological facts. She has written the play, designed the costumes, and then trained a large group of Navajos employed on the park to their various parts. These plays have been given in the ruins of Spruce Tree House at night, so that the red flares used to illuminate the actions will be most effective. Visitors are seated on the opposite rim of the Spruce Tree Canyon, several hundred feet from the ruin. Visitors have come hundred miles to see a single performance.

### HAWAII NATIONAL PARK, HAWAII

Travel to Hawaii National Park has increased greatly during the past year, a total of 64,155 visitors having been recorded as against 52,210 in 1924. The maneuvers of the United States Fleet to the islands, and the visit of a squadron of the Imperial Japanese Navy gave many naval officers and men a chance to see the park. The Hilo Chamber of Commerce rendered assistance in arranging for the visit of the men from the United States Fleet, and Admiral Coontz cooperated by furnishing a shore patrol from the ships so that the additional crowds were handled with little expense to the Interior Department. While members of the Japanese squadron were visiting the park local Japanese were used as guides. The visit of the American Fleet resulted in the establishment of a Navy recreation camp for the use of officers and men stationed at Pearl Harbor.

### ROAD WORK

The greater portion of the first year's funds allotted to this park under the road budget were expended in widening and making safe the road in the Kilauea section of the park leading to the volcano, which was destroyed during the eruptions last year. This work was accomplished before the heavy influx of naval visitors. In addition the Bureau of Public Roads cooperated in making surveys of the Chain of Craters Road in the Kilauea section and of the Mauna Loa Road.

### VOLCANIC ACTIVITY

There was no spectacular volcanic display during the year just ended such as occurred during 1924, but hundreds of earthquakes indicated that disturbances continue far beneath the two volcanic peaks, which may some day result in the return of molten lava to the crater of Kilauea. Several times during the season rumbling avalanches within the crater walls sent clouds of rock dust thousands of feet into the air, and early in the year an enormous steam cloud rose from the crater each morning. The only sign of action in Mauna Loa was the appearance of fumes in the summit crater. The volcano observatory, under the supervision of the United States Geological Survey, continued its work of observing volcanic activity and recording seismic disturbances.



SHORE PATROL FROM SHIPS COOPERATING WITH NATIONAL PARK SERVICE  
IN MAINTAINING ORDER DURING VISIT OF MEN FROM UNITED STATES  
FLEET

HAWAII NATIONAL PARK



NEW MOTOR ROAD AT FOOT OF BUBBLE POND

LAFAYETTE NATIONAL PARK





DRINKING FOUNTAIN  
MUIR WOODS NATIONAL MONUMENT



Photo by T. G. Claire

NEW ORNAMENTAL GATEWAY  
SITKA NATIONAL MONUMENT

### LAFAYETTE NATIONAL PARK, ME.

This park still continues to grow through donations. To facilitate park administration and give access over park lands from the public highway to the Champlain Mountain section of the park Superintendent Dorr presented the United States Government with 4.29 acres of land for park purposes. A further donation of 17 acres was delayed through legal complications in the deed to this land, but will be made later.

The wisdom of the generous donors of the Lafayette National Park is proved by the increasing numbers of visitors each year. During the year just ended 73,673 people visited the park, as compared with 71,758 last year. Motor camping is increasing, and it is imperative that adequate camp grounds be installed as promptly as possible.

In addition to continuing work on the motor road to Jordan Pond and on the system of roads for use with horses, commenced in 1923 with private funds, an allotment of \$50,000 from the general road budget made possible the beginning of construction on the Cadillac Mountain Road. Another short stretch of road is under construction across the lands recently donated to connect the Champlain section of the park with the public highway.

Scientific studies have been made of the flora and fauna of the region during the past year, and the State commissioner of inland fisheries and game has cooperated generously in the planting of fish fry in the waters of the park. During the hunting season last year park officials noted with interest the fact that many sportsmen seemed to enjoy equally as much as hunting the opportunity to stop over at the park and observe the wild animals in this absolute game sanctuary.

### HOT SPRINGS NATIONAL PARK, ARK.

The United States Public Health Service continued their detail of a medical officer to act as superintendent of the Hot Springs National Park, under the cooperative arrangement in force.

#### GOVERNMENT FREE BATHHOUSE AND CLINIC

A total of 3,441 persons bathed at the Government free bathhouse during the year. These persons received 73,841 baths. New applicants numbered 3,353.

The free clinic operated in connection with the free bathhouse and under control of an officer of the Public Health Service examined and treated 3,411 persons. Of these, 2,787 were venereal and 624 were nonvenereal cases. The course of instruction for physicians was continued and was completed by several physicians.

#### PAY BATHHOUSES

One new bathhouse, the Arlington, was completed. This house, in connection with the new \$3,000,000 Arlington Hotel, opened December 20, 1924.

Total profits reported by 17 pay bathhouses were \$109,015.11, while 3 houses reported deficits totaling \$3,877.46. Total baths numbered 729,483, of which 647,240 were paid baths.

#### MISCELLANEOUS

The donation of 16 acres of land east of Hot Springs Mountain by the city of Hot Springs was accepted by the Government for a public camp ground. This site was developed into a fine tourist camp, with electric lights, swimming pool and dressing rooms, modern comfort station, roads, bridges, and a deep well furnishing 30,000 gallons of water daily.

Reconstruction of all mountain roads within the park has been carried on under the general road budget. Trails have been put in fine condition. Drainage facilities have been improved. Contract for installation of about 2,000 feet of 14-inch cast-iron sanitary sewer, serving bathhouse row, was let, the cost being approximately \$15,000. Water and electric light systems have been greatly improved. All buildings have been kept in good condition.

Tourist travel has increased greatly, due to a great extent to the large number of auto tourists coming over the new paved highway which connects this city with Little Rock. The number of visitors for the year is estimated at 265,500.

#### SANITATION AND PUBLIC HEALTH MEASURES

Bathhouses were given at least five regular inspections each month and were also inspected at irregular intervals. All bathhouse employees were given monthly physical examinations to detect communicable diseases, and health cards issued. New employees were given complete physical examinations. Bacteriological examinations were made of the water, and mosquito-control work was carried on.

#### ZION NATIONAL PARK, UTAH

The first advertised tourist season in Zion Park brought 16,817 visitors, twice as many as the preceding year. Adequate preparations had been made for them. The Utah Parks Co. was ready on May 15 with their new two-story rustic lodge and 46 guest cottages providing comfortable sleeping accommodations for 184 guests. To bring them from the railroad at Cedar City a fleet of new motor busses was provided, which rendered excellent service. The Utah-Grand Canyon Transportation Co. with equally good equipment took them on to Grand Canyon and thence to Bryce Canyon.

Richard T. Evans, topographic engineer of the Geological Survey, was detailed to the park as acting superintendent during the season of heaviest travel.

#### IMPROVEMENTS WITHIN PARK

The last 2 miles of road above Cable Mountain were finished, thus completing the 7½ miles of park highway from the entrance to the Temple of Sinawava. Beyond for a distance of 1 mile to the Narrows a footpath and a separate trail for horses were built. To render Angels' Landing accessible to even the timid person a foot-



path with about 500 feet of pipe railing in the dangerous places was constructed from a point on the West Rim Trail. Footbridges were thrown across the river at the public camp grounds and at the lodge, and about 2 miles of connecting trail built on the west side terrace.

The public camp grounds were supplied with a good water system and a modern comfort station, and were enlarged to meet the increased auto tourist travel expected next year.

#### APPROACH ROADS

A standard highway from Cedar City to Toquerville was completed and plans perfected for commencing work on 10 miles of road from the park entrance to Grafton. The completion of the steel bridge at Rockville and grading of 10 miles of road beyond made available for travel the cut-off to Grand Canyon.

The growing popularity of the circle trip between Cedar City, Zion, Grand Canyon, and Bryce Canyon emphasizes the urgency of the new road up Pine Creek to Mount Carmel, which the Bureau of Public Roads is now surveying. It will be a wonderfully scenic road besides materially reducing some important distances.

#### MOUNT MCKINLEY NATIONAL PARK, ALASKA

The most important development in Mount McKinley Park during the past year was the beginning of road work under the Budget. For the first year \$80,000 was allotted to this park, to be expended by the Alaska Road Commission, and the commission was also authorized to incur obligations up to \$50,000 during the fiscal year 1926 under the provisions of the act of March 3, 1925. The three-year road project for the park provides for the construction of 33 miles of road and 70 miles of trail, at an estimated cost of \$272,700.

In connection with this road work, 36½ miles of final location surveys were run, 14 miles of road cleared and grubbed, 10 miles graded, and 8 miles partially surfaced. In addition to national park road funds, cooperative funds of the Alaska Road Commission and the Territory of Alaska were expended on this project.

#### HUNTING NEAR NORTHERN BOUNDARY

During the winter considerable hunting was carried on along the west and east forks of the Toklat River, near the northern boundary, and in the central and western portions of the park. It is impossible for the superintendent and his two rangers to cover the entire area of this big park, especially under Alaskan winter conditions, and for this reason the slaughter of mountain sheep and caribou in the outlying sections of the park can not be prevented under present conditions. It would not be practicable to detail one of the rangers to these sections, as all of the men are needed to patrol the sections of the park close to the railroad. In this vicinity the wild animals are becoming noticeably tamer, and illegal hunters would make a big killing here if the vigilance of the park force was relaxed in the slightest degree.

### LASSEN VOLCANIC NATIONAL PARK, CALIF.

For the first time active administration of Lassen Park was taken over by the National Park Service, and a chief ranger appointed as the first permanent field representative. This was made possible by the granting of larger appropriations by Congress, \$10,000 being available for the 1926 fiscal year, exclusive of road funds. The largest annual appropriation made for the park up to this time was \$3,000, and with such limited funds it had been impossible to organize a field force and develop the area.

#### TOPOGRAPHIC MAPPING PROCEEDING

The topographic mapping of the area, begun by the United States Geological Survey last year, has been continued during the summer and is still in progress. It is expected that the field work will be completed next spring. The map, when finished, will cover contiguous areas that should be considered when an enlargement project for the park is taken up, and will be very useful in this respect, as well as in connection with park development plans.

#### ROAD WORK

Under the road budget approximately 16 miles of roadway previously located were staked and platted by the engineering division of the service, and during the summer contracts were let for the construction of about 9 miles of road at an approximate cost of \$91,675.

#### GRAZING

The grazing of about 1,000 head of cattle in the park was continued again this year under cooperative arrangement with the Forest Service. Now that a permanent park representative has been appointed consideration is being given to taking over the issuing of grazing permits in order that the number of cattle grazed may be reduced in accordance with national park use and policy.

### WIND CAVE NATIONAL PARK, S. DAK.

For the year three features of Wind Cave's activities stand out strikingly. These are the spectacular increase in number of visitors, most of whom came to the park in private automobiles; the extremely inadequate water supply, which will not now meet the increased demands; and the deficient, antiquated system of lighting the cave for visitors. Gasoline lanterns and candles are still used for lighting purposes. It is very annoying to visitors to be compelled to carry candles or lanterns while making a two or three hour trip through the cave, over many steep stairs and narrow footpaths, and the unsatisfactory light thus provided does not enable them to see the cave properly. Many criticisms were heard regarding the poor lighting facilities.

Therefore, the two imperative needs of Wind Cave National Park are additional water supply and an adequate electric light plant. These two needed improvements are indispensable and should be

provided in the near future. Once these improvements are provided, and some needed equipment purchased, this park should be able to operate for several years with nominal appropriations on a purely maintenance basis.

During the year there were 69,267 visitors, as compared with 52,166 in 1924.

#### PLATT NATIONAL PARK, OKLA.

Travel to Platt Park continued heavy, averaging practically the same as last year. The records show that 573,522 persons entered the park gates, but many of them undoubtedly entered the park gates numerous times. For that reason the policy adopted several years ago has been followed, of dividing by four the total number counted. It is believed this gives a fair estimate of the number of visitors. This year the number of visitors is estimated at 143,380, as against 134,874 last year.

Supt. Robert G. Morris resigned during the year and Forest L. Carter, formerly assistant chief park ranger in Yellowstone National Park, was transferred to Platt as superintendent. This is in line with the policy of the service to promote within the ranks wherever practicable.

An allotment of \$42,000 was made for work under the road budget, and the work progressed on the widening, grading, and resurfacing of park roads to put them on a par with the approach roads leading to Platt Park. General improvement work was also carried on in the reservation.

#### SULLYS HILL NATIONAL PARK, N. DAK.

Again during the year the superintendent of the Fort Totten Indian School, through the courtesy of the Bureau of Indian Affairs, acted as the superintendent of the Sullys Hill National Park without compensation from the National Park Service.

The Bureau of Biological Survey of the Department of Agriculture continued to use the area as a game preserve, and expended some funds in maintenance. No funds have ever been available for expenditure by the National Park Service in this park.

A Federal-aid highway is now being constructed through the park, and when this is completed will provide convenient access to Sullys Hill from either the Red Trail or the Roosevelt Highway. While travel to the park is increasing, it is mainly local in character.

#### NATIONAL MONUMENTS

The number of travelers visiting the national monuments under the administration of the Department of the Interior indicates that these areas have gained greatly in popularity. During the year ended September 30, 1924, the visiting list to the monuments was 248,555 while in 1925 this figure increased to 347,572, an increase of approximately 40 per cent.

The superintendent of southwestern monuments continued his general supervision of all the national monuments of the Southwest, in addition to serving as custodian of the Casa Grande and Tuma-



cacori National Monuments. The new Wupatki Monument in Arizona is included in the group of southwestern monuments, making 18 in the group. The advantages of having a local superintendent handling the field administration of the various monuments of the Southwest are becoming more apparent each year.

Many monuments of this group contain ruins of historic or prehistoric structures, and it was to these that special attention was given, in order that these relics of our past history might be saved from disintegrating under the action of wind and rain. Again an allotment of \$5,000 was made for repair of existing ruins, and work was continued at Aztec Ruin, Casa Grande, Chaco Canyon, El Morro, Gran Quivira, Montezuma Castle, Pipe Spring, and Tumacacori National Monuments. This work lies along such lines as underpinning and bracing walls, capping walls with cement, opening drainage lines, repairing and reinforcing roofs, fencing for protection again loose stock, etc.

Good museums are now established at the Petrified Forest, Aztec Ruin and Casa Grande National Monuments, the only ones of the southwestern monuments where full paid men are in charge. Some material has been gathered for museums at Gran Quivira and Montezuma Castle, but this will not be put on display until full-time custodians can be appointed.

Scientific research work was continued during the year by Dr. Neil M. Judd who is in charge of the National Geographic Society Expedition at Chaco Canyon National Monument; by Dr. Edgar L. Hewett, of the American School of Archaeology, at Gran Quivira; and by Custodian William Nelson at the Petrified Forest. Much new material has been brought to light and an advance has been made in the archeological and geological problems presented at these places.

The protection of the Aztec Ruin National Monument was made possible by the American Museum of Natural History, which furnished the funds to pay the custodian's salary.

Considerable improvement work was done at the Carlsbad Cave National Monument, in the way of lighting, and installing pump, tank, and galvanized pipe for a water system. The Carlsbad Chamber of Commerce constructed a stairway through the natural opening of the cavern at an expense of \$1,600, thereby eliminating the former hazardous method of ingress by way of an iron bucket and cable. A new road is being built from the Carlsbad-Van Horn Highway to the cavern on an easy grade, so that all cars can drive to the portal of the cavern. Heretofore only high-powered cars could climb the old hill with its 28 per cent grade. Word has just been received of the relinquishment by the State of New Mexico of all title to section 36, T. 24 S., R. 24 E. in the Carlsbad Cave National Monument and the reversion of this land to the United States Government.

From an archeological standpoint one of the most interesting developments in the southwestern monuments was the discovery of a valuable cache of turquoise mosaics in the Casa Grande, and which is reported in detail on page 9 under "Archeological work."

The Muir Woods National Monument in California continued to draw large numbers of visitors, so that it was necessary for the resi-

dent custodian to employ two assistants on Sundays and holidays, during the summer season. A heavy storm that visited the monument in February resulted in much damage which had to be repaired at a cost of \$400. This storm so badly damaged the automobile road leading into the monument that it became impassible to vehicles. It was repaired by the owner, Hon. William Kent, the donor of the monument, at a personal expense of about \$300.

Owing to the construction of a road leading to and into the monument, and to the excellent cooperation of newspapers and automobile clubs of the near-by cities in giving publicity to the Pinnacles National Monument, there was an enormous increase in travel. Last year 8,973 people visited the monument, and it was estimated that this year there would be about 25,000 visitors. Instead, however, the number of campers alone nearly reached this figure, while the total number of visitors was 63,522.

The Board of Road Commissioners for Alaska and the Territory continued to cooperate with the National Park Service in supplementing funds available for improvement work in the Sitka National Monument. Considerable repair and maintenance work was done during the year, including the painting of the totem poles and the erection of an ornamental gateway consisting of two totem poles and two heavy concrete pillars connected by a heavy chain. All work in the monument was done under the direct supervision of the Board of Road Commissioners.

### LEGISLATION

The following is a brief summary of legislation affecting the national parks considered in Congress since the preparation of the eighth annual report.

#### BILLS ENACTED INTO LAW

The deficiency act of December 5, 1924,<sup>1</sup> carried appropriations of \$1,044,871 for the National Park Service, as follows:

Personal services in the District of Columbia.....	\$2, 700
Mesa Verde National Park, on account of flood damage.....	3, 000
Mount Rainier National Park, on account of flood damage.....	13, 000
Rocky Mountain National Park, on account of flood damage.....	26, 171
Road construction, under \$7,500,000 authorization of Congress.....	1, 000, 000

The funds provided for the repair of damage caused by floods in Mount Rainier and Rocky Mountain National Parks could not be used without special authority, however, as they were made available for the fiscal year 1924, which ended June 30, 1924. This was due to the fact that the bill was passed in December in the same form in which it existed when Congress adjourned in June, 1924, with the bill unpassed because of a filibuster. These funds were later made available.

The act of December 6, 1924,<sup>2</sup> making additional appropriations for the fiscal year 1925 to enable the heads of the several departments and independent establishments to adjust the compensation of field employees appropriated \$102,122 for the National Park Service.

<sup>1</sup> Public, No. 292.

<sup>2</sup> Public, No. 293.

The deficiency act of January 20, 1925,<sup>3</sup> carried an item of \$25,000 for the investigation, control, and prevention of insect infestations in the forests of the national parks.

S. 4109,<sup>4</sup> signed by the President on February 21, 1925, entitled "An act for the securing of lands in the southern Appalachian Mountains and in the Mammoth Cave regions of Kentucky for perpetual preservation as national parks," authorized the Secretary of the Interior to determine, through a commission to be appointed by him, the boundaries and areas of such portions of the Blue Ridge Mountains and the Great Smokies as may be recommended by him to be acquired for national park purposes, as well as to investigate the Mammoth Cave region. This act authorized an appropriation of \$20,000 to cover necessary expenses of the commission and to enable the Secretary to secure options on desirable tracts of land.

H. R. 11952,<sup>5</sup> approved February 24, 1925, entitled "An act to authorize the exchange of certain patented lands in the Rocky Mountain National Park for Government lands in the park," authorized the exchange of 160 acres of Government land, now used for hotel purposes, for 200 acres of private land in the beautiful Loch Vale region of the park, one of its wildest and most interesting sections.

The Interior Department appropriation act of March 3, 1925,<sup>6</sup> carried appropriations of \$3,218,409 for the National Park Service in Washington and for the administration, protection, maintenance, and improvement of the various national parks and monuments. In addition authority was given to incur obligations and enter into contracts for additional road work at a total cost not exceeding \$1,000,000.

The deficiency act of March 4, 1925,<sup>7</sup> carried an appropriation of \$20,000 as authorized by S. 4109 for the investigation of the southern Appalachian and Mammoth Cave regions, and also made available \$39,171 carried in the deficiency act of December 5, 1924.

H. R. 4114,<sup>8</sup> approved by the President February 26, 1925, entitled "An act authorizing the construction of a bridge across the Colorado River near Lee Ferry, Arizona," is also of great interest to the National Park Service. The construction of this bridge will obviate the long detour now necessary in motoring between the Grand Canyon and Zion National Parks.

**BILLS INTRODUCED OR ACTED UPON DURING THE LAST SESSION OF THE SIXTY-EIGHTH CONGRESS WHICH FAILED OF PASSAGE**

In addition to S. 4109 (Public, No. 437), for the investigation of the southern Appalachian and Mammoth Cave regions, seven other bills were introduced for the creation of parks in the southern Appalachians, covering the Shenandoah, Smoky Mountain, Linville Gorge, and Grandfather Mountain areas.

A bill, H. R. 12408, was also introduced for the establishment of the Mount Shasta National Park in the State of California.

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<sup>3</sup> Public, No. 326.

<sup>4</sup> Public, No. 437.

<sup>5</sup> Public, No. 461.

<sup>6</sup> Public, No. 580.

<sup>7</sup> Public, No. 631.

<sup>8</sup> Public, No. 482.



Other measures of interest to the National Park Service that failed of passage during the last session of Congress are as follows:

H. R. 11751, "A bill to provide for the enlargement of the winter game (elk) reserve in the State of Wyoming."

S. 4405, "A bill to abolish the Sullys Hill Park in the State of North Dakota and to provide for the administration of the area heretofore known by that name as a national game preserve."

H. R. 11357, "A bill authorizing the President of the United States to restore to the public domain lands reserved by public proclamation as national monuments, and validating any such reservations heretofore so made by Executive order."

S. 3826, "A bill to restore to the public domain certain lands within the Casa Grande National Monument, and for other purposes."

S. 3493, "A bill to amend an act entitled 'An act to establish the Utah National Park in the State of Utah.'" The purpose of this bill was to correct an error in the description of the lands to be included in the Utah National Park.

### PRESIDENTIAL PROCLAMATIONS

Presidential proclamations affecting national monuments were issued as follows:

October 15, 1924, No. 1713, creating the following five national monuments, which were placed under the jurisdiction of the War Department: Fort Wood, N. Y.; Castle Pinckney, S. C.; Fort Pulaski, Ga.; Fort Marion, Fla.; and Fort Matanzas, Fla.

December 9, 1924, No. 1721, creating the Wupatki National Monument, Ariz., which was placed under the jurisdiction of the Department of the Interior.

February 6, 1925, No. 1730, creating the Meriwether Lewis National Monument, Tenn., which was placed under the jurisdiction of the War Department.

February 26, 1925, No. 1733, creating the Glacier Bay National Monument, Alaska, which was placed under the jurisdiction of the Department of the Interior.

### EXECUTIVE ORDERS

November 20, 1924, No. 4103, withdrawal of lands in Colorado, pending determination of advisability of including such lands in a national monument or recreational area.

March 24, 1925, No. 4181, withdrawal of lands in Utah pending legislation. These lands are being considered for addition to Zion National Park.

### CONCLUSION

This report of the activities and accomplishments of the National Park Service for the last fiscal year, and also for the travel season which ended September 30, 1925, has necessarily been brief in order that it might comply both with the spirit and the letter of the rules of economy laid down by the President. It covers, nevertheless, the most successful and important year of operations in our history, both in the development of the opportunities within the parks them-

selves along educational and recreational lines and in the rendering of service for the physical comfort and convenience of our guests. A constantly increasing annual visiting list brings added responsibilities. But while there is a great deal remaining to be done to make the parks and monuments measure up to the highest degree of service, I am confident that the period covered by this report has been one of unusual achievement and progress to which I may point with pride and pleasure.

STEPHEN T. MATHER, *Director.*

## APPENDIX A

### THE NATIONAL PARKS AND MONUMENTS

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## NATIONAL PARKS ADMINISTERED BY THE NATIONAL PARK SERVICE, DEPARTMENT OF THE INTERIOR

[Number, 19; total area, 11,372 square miles, or 7,277,824.54 acres; chronologically in order of creation]

Name	Location	Nearest rail stations	When established	Statute reference	Area (square miles)	Area (acres)	Private lands (acres)	Special characteristics
Hot Springs	Middle Arkansas	{ Hot Springs, Rock Island and Missouri Pacific Systems.	{ Apr. 20, 1832	{ 4 Stat. 505.	{	911.63	None.	{ 46 hot springs possessing curative properties—Many hotels and boarding houses—19 bathhouses under Government supervision.
Yellowstone	Wyoming, Montana, and Idaho.	{ Gardiner, Mont.; Northern Pacific; West Yellowstone, Mont.; Union Pacific; Cody, Wyo.; Burlington Route; Lander, Wyo.; Chicago & North Western.	Mar. 1, 1872	17 Stat. 32, 33	13,348	2,142,720	None.	{ More geysers than in all rest of world together—Boiling springs—Mud volcanoes—Peatified forests—Grand Canyon of the Yellowstone, remarkable for gorgeous coloring—Large lakes—Waterfalls—Vast wilderness inhabited by deer, elk, bison, moose, antelope, bear, mountain sheep, etc.—Greatest wild bird and animal preserve in the world.
Sequoia (sé-kwó'-á)	Middle eastern California.	{ Exeter or Visalia, Santa Fe and Southern Pacific; thence Visalia Electric to Lemon Cove.	Sept. 25, 1890	26 Stat. 478, 650	252	161,597	1,400	{ The Big Tree National Park—Several hundred sequoia trees over 10 feet in diameter, some 25 to 36 feet in diameter—Flowing mountain ranges—Startling precipices—Mile-long cave of delicate beauty—Fine trout fishing.
Yosemite (yó-sēm'-i-té)	do.	{ Merced, Southern Pacific and Santa Fe; thence Yosemite Valley R. R. to El Portal.	{ Oct. 1, 1890	{ 26 Stat. 650	{	719,802.4	10,959.89	{ Valley of world-famed beauty—Lofly cliffs—Romantic vistas—Waterfalls of extraordinary height—3 groves of big trees—Large areas of snowy peaks—Waterwheel Falls—Good trout fishing.
General Grant	do.	{ Fresno, Sanger, or Visalia, Santa Fe and Southern Pacific.	do.	26 Stat. 650	4	2,536	160	{ Created to preserve the celebrated General Grant Tree, 35 feet in diameter—6 miles from Sequoia National Park.
Mount Rainier (rā-nēr')	West central Washington.	Ashford, Chicago, Milwaukee & St. Paul.	Mar. 2, 1899	30 Stat. 993	324	207,360	18.2	{ Largest accessible single-peak glacier system—28 glaciers, some of large size—48 square miles of glacier, 50 to 500 feet thick—Wonderful subalpine wild-flower fields.
Crater Lake	Southern Oregon	Medford or Klamath Falls, Southern Pacific.	May 22, 1902	32 Stat. 202	249	159,360	1,949.21	{ Lake of extraordinary blue in crater of extinct volcano, no inlet, no outlet—Sides 1,000 feet high—interesting lava formations—Fine fishing.

Platt.....	Southern Oklahoma.....	{ July 1, 1902 Apr. 21, 1904 June 29, 1906 Jan. 9, 1903 }	{ 32 Stat., 641, 655. 33 Stat., 220----- 34 Stat., 837----- 32 Stat., 765----- }	1½	848, 22	None.	{ Many sulphur and other springs pos- sessing medicinal value. }
Wind cave.....	South Dakota.....			17	10, 899, 22	None.	{ Cavern having many miles of galleries and numerous chambers of consid- erable size containing many peculiar formations. }
Sullys Hill.....	North Dakota.....	Apr. 27, 1904	33 Stat. 322, 323, 2388.	1½	780	None.	{ Small park with woods, streams, and a lake—is an important wild-animal preserve. }
Mesa Verde (mā'sa vēr'dā).	Southwestern Colo- rado	June 29, 1906 June 30, 1913	34 Stat. 616----- 38 Stat. 82, 83, 84.	77	48, 966. 4	993	{ Most notable and best preserved, pre- historic, cliff dwellings in United States, if not in the world. }
Glacier (glā'shēr).....	Northwestern Mon- tana.	May 11, 1910	36 Stat. 354-----	1, 534	981, 681	15, 923, 24	{ Rugged mountain region of unsur- passed Alpine character—250 glacier- led lakes of romantic beauty—60 small glaciers—Precipices thousands of feet deep—Almost sensational scen- ery of marked individuality—Fine trout fishing. }
Rocky Mountain.....	{ North middle Colo- rado. }	{ Jan. 26, 1915 Feb. 14, 1917 June 2, 1924 }	{ 38 Stat. 798----- 39 Stat. 916----- 43 Stat. 252----- }	397	253, 982	290, 593	{ Heart of the Rockies—Snowy range, peaks 11,000 to 14,255 feet altitude— Remarkable records of glacial period. }
Hawaii (hā-wī'ē).....	Hawaiian Islands.....	Aug. 1, 1916 May 1, 1922	{ 39 Stat., 432----- 42 Stat., 503----- }	186	118, 695	241, 000	{ 3 separate areas: 2—Kilauea, continu- ously active for century and section of interesting Kau Desert, and Mauna Loa, altitude 13,675 (largest active volcano in world, erupting every decade)—are on Hawaii; Hale- akala, on Maui, 10,000 feet high, with tremendous rift in summit 8 miles across and 3,000 feet deep; contains many cones, gorgeous tropical forests; mahogany groves, and lava caves; erupted 200 years ago. }

<sup>1</sup> In Wyoming, 3,114 square miles; in Montana, 198 square miles; in Idaho, 36 square miles.

<sup>2</sup> Estimated.

*National parks administered by the National Park Service, Department of the Interior—Continued*

[Number, 19; total area, 11,372 square miles, or 7,277,824.54 acres; chronologically in order of creation]

Name	Location	Nearest rail stations	When established	Statute reference	Area (square miles)	Area (acres)	Private lands (acres)	Special characteristics
Lassen Volcanic (las'ën)	Northern California.	Red Bluff, Southern Pacific; Paxton, Western Pacific.	Aug. 9, 1916	39 Stat. 442-----	124	79,561.58	2,955	Only active volcano in United States proper—Lassen Peak, 10,460 feet in altitude—Cinder Cone, 6,907 feet—Hot Springs—Mud geysers—Ice caves—Majestic canyons—Numerous lakes—Fine forests.
Mount McKinley-----	South central Alaska	{McKinley Park Station, United States Alaska Railroad.	{Feb. 26, 1917 Jan. 30, 1922	{39 Stat. 938----- 42 Stat. 359-----	{2 645	1,692,800	None.	{Highest mountain in North America (altitude 20,300 feet)—Rises higher above surrounding country than any other mountain in world.
Grand Canyon <sup>3</sup> -----	{North central Arizona.	{Grand Canyon Station, Santa Fe System, North Rim motor stage from Cedar City, Utah, Union Pacific; or from Marysville, Utah, Denver & Rio Grande Western.	{Jan. 11, 1908 Feb. 26, 1919	{35 Stat. 2175----- 40 Stat. 1175-----	{958	613,120	1,057.99	{The greatest example of erosion and the most sublime spectacle in the world.
Lafayette <sup>4</sup> -----	Maine coast-----	{Mount Desert Ferry, Maine Central System.	{July 8, 1916 Feb. 26, 1919	{39 Stat. 1785----- 40 Stat. 1178-----	{8	5,404.09	None.	{The group of granite mountains upon Mount Desert Island.
Zion <sup>5</sup> -----	Southwestern Utah.	{Cedar City, Union Pacific System	{July 31, 1909 Mar. 18, 1918 Nov. 19, 1919	{36 Stat. 2498----- 40 Stat. 1760----- 41 Stat. 356-----	{120	76,800	2,817.72	{Magnificent gorge (Zion Canyon), depth from 800 to 2,000 feet, with precipitous walls of great beauty and scenic interest.

<sup>3</sup> Formerly Grand Canyon National Monument.

<sup>4</sup> Formerly Sieur de Monts National Monument; donated to the United States.

<sup>5</sup> Formerly Zion National Monument.



## THE NATIONAL MILITARY AND OTHER PARKS ADMINISTERED BY THE WAR DEPARTMENT

[Number, 7; total area, 22 square miles or 14,038 acres; chronologically in order of creation]

Name	Location	Approaches	When established	Statute reference	Area (acres)	Special characteristics
Chickamauga and Chattanooga.	Georgia and Tennessee.	Chattanooga, several southern roads.	Aug. 19, 1890	26 Stat. 333, 978.	6,543	Beautiful natural park—Embraces battle fields of Chickamauga and Missionary Ridge and scenes of other conflicts of the Civil War fought in the vicinity of Chattanooga during 1863.
Antietam Battle Field.	Maryland.	Antietam, Norfolk & Western.	Aug. 30, 1890	26 Stat. 401.	50	Scene of one of the greatest battles of the Civil War.
Shiloh.	Tennessee.	Corinth, Miss., Illinois Central, and Southern.	Dec. 27, 1894	28 Stat. 597.	3,546	Natural park embracing the battle field of Shiloh near Pittsburg Landing.
Gettysburg <sup>1</sup> .	Pennsylvania.	Gettysburg, Philadelphia & Reading, and Western Maryland.	Feb. 11, 1895	28 Stat. 651.	2,451	Beautiful natural park—Scene of Civil War combat—Probably better marked than any other battle field in the world.
Vicksburg.	Mississippi.	Vicksburg, Alabama & Vicksburg, Vicksburg, Shreveport & Pacific, and Yazoo & Mississippi Valley.	Feb. 21, 1899	30 Stat. 841.	1,323	Beautiful natural park—Scene of the siege and surrender of Vicksburg in 1863 during the Civil War
Lincoln's Birthplace <sup>1</sup> .	Kentucky.	Hodgenville, Illinois Central.	July 17, 1916	39 Stat. 385.	-----	Contains the log cabin and part of the farm where Abraham Lincoln was born.
Guilford Courthouse.	North Carolina.	Greensboro, Southern, and Atlantic & Yadkin.	Mar. 2, 1917	39 Stat. 996.	125	Near Greensboro—Scene of one of the great battles of the Revolution; fought in 1781.

<sup>1</sup> Donated in whole or in part to the United States.

## THE NATIONAL MONUMENTS

## ADMINISTERED BY THE NATIONAL PARK SERVICE, DEPARTMENT OF THE INTERIOR

[Number, 32; total area, 3,681.32 square miles or 2,356,044.31 acres; chronologically in order of creation]

Name	Location	Approaches	Date of creation	Statute reference of proclamation	Area (acres)	Special characteristics
Devils Tower	Wyoming	Moorecroft, Burlington Route.	Sept. 24, 1906	34 Stat. 3236	1, 152	Remarkable natural rock tower, of volcanic origin, 1,200 feet in height.
Montezuma Castle	Arizona	Clarkdale, Santa Fe System.	Dec. 8, 1906	34 Stat. 3265	1 160	Prehistoric cliff-dwelling ruin of unusual size situated in a niche in face of a vertical cliff. Of scenic and ethnologic interest.
El Morro	New Mexico	{Gallup or Thoreau, Santa Fe System.	{Dec. 8, 1906 June 18, 1917	{34 Stat. 3264 40 Stat. 1673	{240	{Enormous sandstone rock eroded in form of a castle, upon which inscriptions have been placed by early Spanish explorers. Contains cliff-dweller ruins. Of great historic, scenic, and ethnologic interest.
Petrified Forest	Arizona	{Admana or Holbrook, Santa Fe System.	{Dec. 8, 1906 July 31, 1911	{34 Stat. 3266 37 Stat. 1716	{25, 625	{Abundance of petrified coniferous trees, one of which forms a small natural bridge. Is of great scientific interest.
Chaco Canyon (ch'á'kó)	New Mexico	Thoreau, Santa Fe System.	Mar. 11, 1907	35 Stat. 2119	1 20, 629	{Numerous cliff-dweller ruins, including communal houses, in good condition and but little excavated. One of the most noted redwood groves in California, and was donated by Hon. William Kent, ex-Member of Congress. Located 7 miles from San Francisco.
Muir Woods (mūr)	California	{Ferry from San Francisco, thence Mount Tamalpais & Muir Woods R. R.	{Jan. 9, 1908 {Sept. 22, 1921	{35 Stat. 2174 42 Stat. 2249	{426. 43	{Many spire-like rock formations, 600 to 1,000 feet high, visible many miles; also numerous caves and other formations.
Pinnacles	do.	{Soledad or Hollister, Southern Pacific.	{Jan. 16, 1908 May 7, 1923	{35 Stat. 2177 43 Stat. Proc. 1660.	{2, 980. 26	{3 natural bridges, among largest examples of their kind. Largest bridge is 222 feet high, 65 feet thick at top of arch; arch is 28 feet wide, span 261 feet, height of span, 157 feet. Other two slightly smaller.
Natural Bridges	Utah	{Pack trip from Blanding, Utah, reached by stage from Thompson, Utah, or Mancos, Colo., stations on Denver & Rio Grande Western.	{Apr. 16, 1908 Sept. 25, 1909 Feb. 11, 1916	{35 Stat. 2183 36 Stat. 2502 39 Stat. 1764	{1 2, 740	{Immense limestone cavern of great scientific interest, magnificently decorated with stalactite formations. Now closed to public because of depredations by vandals.
Lewis and Clark Cavern?	Montana	Temporarily closed to public	{May 11, 1908 May 16, 1911	{35 Stat. 2187 37 Stat. 1679	{160	{Ruin of Franciscan mission dating from seventeenth century. Being restored by National Park Service as rapidly as funds permit.
Tumacacori (tū-mā-ká'-kó-ré).	Arizona	Tucson, Southern Pacific, and El Paso & Southern.	Sept. 15, 1908	35 Stat. 2205	10	{Numerous pueblo, or cliff-dweller ruins, in good preservation.
Navajo (ná'vā'-hō)	do.	{Gallup, N. Mex., or Flagstaff, Ariz., Santa Fe System.	{Mar. 20, 1909 Mar. 14, 1912	{36 Stat. 2491 37 Stat. 1733	{1 360	{Cavern of considerable extent, near Cody.
Shoshone Cavern (shó'-shō'né).	Wyoming	Cody, Burlington Route	Sept. 21, 1909	36 Stat. 2501	210	

Gran Quivira (grán kē-vér-ē).	New Mexico.	Mountainair, Santa Fe System.	{Nov. 1, 1909 { 36 Stat. 2503. { 41 Stat. 1778.	1 560	One of the most important of earliest of pueblo ruins in the Southwest. Monument also contains Park of great natural beauty and historic interest as scene of massacre of Russians by Indians. Contains 16 totem poles of best native workmanship. Unique natural bridge of great scientific interest and symmetry. Height 309 feet above water, and span is 278 feet, in shape of rainbow.
Sitka.	Alaska.	Port of call for steamships from Seattle.	{Mar. 23, 1910 { 36 Stat. 2601.	1 57	
Rainbow Bridge.	Utah.	Pack trip from Kayenta, Ariz., reached from Gallup, N. Mex., or Flagstaff, Ariz., Santa Fe System.	{May 30, 1910 { 36 Stat. 2703.	160	
Colorado.	Colorado.	Grand Junction, Denver & Rio Grande Western.	{May 24, 1911 { 37 Stat. 1681.	13, 883	Many lofty monoliths, and is wonderful example of erosion, and of great scenic beauty and interest.
Papago Saguario (pá'pá-gō-sá-gwá'ró).	Arizona.	{Phoenix or Tempe, Southern Pacific.	{Jan. 31, 1914 { 38 Stat. 1991. {Dec. 28, 1922 { 3769.	1, 940. 43	{Splendid collection of characteristic desert flora and numerous pictographs. Interesting rock formations.
Dinosaur (dī'nō-sór).	Utah.	Watson, Uintah Railway.	{Oct. 4, 1915 { 39 Stat. 1752.	80	{Deposits of fossil remains of prehistoric animal life of great scientific interest.
Capulin Mountain (ká-pu'lin).	New Mexico.	Folsom, Colorado & Southern.	{Aug. 9, 1916 { 37 Stat. 1792.	681	{Cinder cone of geologically recent formation.
Verendrye (vér-rón-dre).	North Dakota.	Sanish, Soo Line.	{June 29, 1917 { 40 Stat. 1677.	253. 04	{Includes Crowhigh Butte, peculiar mountain formation, from which Explorer Verendrye first beheld territory beyond Missouri River.
Casa Grande (ká'sá grán'dá).	Arizona.	{Casa Grande, Southern Pacific.	{June 22, 1892. <sup>3</sup> { 25 Stat. 961. {Dec. 10, 1909 { 36 Stat. 2504. {Aug. 3, 1918 { 40 Stat. 1818.	480	{These ruins are one of the most noteworthy relics of a prehistoric age and people within the limits of the United States. Discovered in ruinous condition in 1694.
Katmai (kát'mi).	Alaska.	{Sailing vessel from Kodiak, reached by steamship from Seattle.	{Sept. 24, 1918 { 40 Stat. 1855. {Sept. 5, 1923 { Ex. Order No. 3897.	1, 087, 990	{Wonderland of great scientific interest in the study of volcanism. Phenomena exist upon a scale of great magnitude. Includes "Valley of Ten Thousand Smokes."
Scotts Bluff.	Nebraska.	Gering, Union Pacific.	{Dec. 12, 1919 { 41 Stat. 1779. {May 9, 1924 { Ex. Order No. 4008.	1, 893. 83	{Region of historic and scientific interest. Many famous old trails traversed by the early pioneers in the winning of the West passed over and through this monument.
Yucca House ? (yūc-cá).	Colorado.	Mancos, Denver & Rio Grande Western.	{Dec. 19, 1919 { 41 Stat. 1781.	9. 6	{Located on eastern slope of Sleeping Ute Mountain. Ruins of great archeological value, relic of prehistoric inhabitants.
Fossil Cycad.	South Dakota.	Minnekahta, C. B. & Q.	{Oct. 21, 1922 { 42 Stat. 2286.	320	{Area containing deposits of plant fossils.
Aztec Ruin ?	New Mexico.	Aztec, D. & R. G. W.	{Jan. 24, 1923 { 42 Stat. 2295.	4. 6	{Prehistoric ruin of pueblo type containing 500 rooms.
Hovenweep.	Utah-Colorado.	Mancos, D. & R. G. W.	{Mar. 2, 1923 { 42 Stat. 2299.	285. 8	{Four groups of prehistoric towers, pueblos, and cliff dwellings.
Pipe Spring.	Arizona.	Cedar City and Utah, U. P.	{May 31, 1923 { 42 Stat., Proc. 1663.	40	{Old stone fort and spring of pure water in desert region, serves as memorial to early western pioneer life.
Carlsbad Cave.	New Mexico.	Carlsbad, Santa Fe System.	{Oct. 25, 1923 { Proc. 1679.	719. 22	{Limestone caverns of extraordinary proportions and of unusual beauty.
Craters of the Moon.	Idaho.	Arco, Oregon Short Line.	{May 2, 1924 { Proc. 1694.	24, 960	{Weird volcanic region containing remarkable fissure eruption together with its associated volcanic cones, craters, lava flows, caves, natural bridges, and other phenomena.
Wupatki Glacier Bay.	Arizona-Alaska.	Flagstaff, Santa Fe System. Juneau, by boat.	{Dec. 9, 1924 { Proc. 1721. {Feb. 26, 1925 { Proc. 1733.	2, 234. 10 1, 164, 800	{Prehistoric dwellings of ancestors of Hopi Indians. Tidewater glaciers of first rank.

<sup>1</sup> Estimated.<sup>2</sup> Donated to the United States.<sup>3</sup> From June 22, 1892, until Aug. 3, 1918, classified as a national park.



## ADMINISTERED BY THE DEPARTMENT OF AGRICULTURE

[Number, 14; total area, 529 square miles or 338,866.33 acres; chronologically in order of creation]

Name	Location	Approaches	Date of creation	Statute reference of proclamation	Area (acres)	Special characteristics
Gila Cliff Dwellings (he'la). Tonto. Jewel Cave.	New Mexico. Arizona. South Dakota.	Silver City, via Pinos Altos, Santa Fe system. Globe, Southern Pacific. Custer, Burlington Route.	Nov. 16, 1907 Dec. 19, 1907 Feb. 7, 1908	35 Stat. 2162. 35 Stat. 2168. 35 Stat. 2180.	160 1,640 11,280	Numerous cliff-dweller ruins of much interest and in good preservation. Do. Limestone cavern of much beauty and considerable extent, limits of which are as yet unknown. Of much interest from geological standpoint as example of eccentric erosion and extinct volcanic action. Of much scenic beauty.
Wheeler.	Colorado.	Wagon-wheel Gap or Creede, Denver & Rio Grande Western.	Dec. 7, 1908	35 Stat. 2214.	300	{Contains many objects of great and unusual scientific interest, including many glaciers. Is summer range and breeding ground of the Olympic elk. Extensive caves in limestone formation of much beauty; magnitude not entirely ascertained. Spectacular mass of hexagonal basaltic columns, like an immense pile of posts. Said to rank with famous Giant's Causeway in Ireland. Contains cliff dwellings of much scientific and popular interest.
Mount Olympus.	Washington.	{Port Angeles by ferry from Seattle.	{Mar. 2, 1909 Apr. 17, 1912	{35 Stat. 2247. 37 Stat. 1737.	{299,370	
Oregon Caves.	Oregon.	Grants Pass, Southern Pacific.	May 11, 1915	39 Stat. 1726.	480	
Devil Postpile.	California.	Laws, Southern Pacific, thence stage to Mammoth.	July 12, 1909	36 Stat. 2497.	800	
Walnut Canyon.	Arizona.	Flagstaff, Santa Fe system.	July 6, 1911	37 Stat. 1715.	900	
Bandelier (Bân-dê-lê').	New Mexico.	Santa Fe, Santa Fe system, and Denver & Rio Grande Western.	Nov. 30, 1915	39 Stat. 1761.	22,075	
Old Kasaan (kă-săn).	Alaska.	Steamships, Seattle to Ketchikan.	Feb. 11, 1916	39 Stat. 1764.	38.3	
Lehman Caves.	Nevada.	Ely, Nevada Northern.	Oct. 25, 1916	39 Stat. 1812.	583.03	
Timpanogos Cave.	Utah.	American Fork, U. P. system; D. & R. G. W.	Jan. 24, 1922	42 Stat. 2260.	250	
Bryce Canyon.	do.	Cedar City, U. P. system; Marysville, D. & R. G. W.	Oct. 14, 1922	42 Stat. 2285.	7,440	
Chiricahua.	Arizona.	Willcox, Southern Pacific.	June 8, 1923	42 Stat. Proc. 1664.	4,480	
			Apr. 18, 1924	Proc. 1692.		Box canyon filled with countless array of fantastically eroded pinnacles. Best exhibit of vivid coloring of earth's materials. Natural formations known as the "Pinnacles," within Coronado National Forest.

1 Estimated.

[Number, 10; total area, 158.1 acres; chronologically in order of creation]

## REPORT OF DIRECTOR OF NATIONAL PARK SERVICE

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Big Hole Battle Field <sup>1</sup> .....	Montana.....	Divide, Union Pacific.....	June 23, 1910	-----	5	Site of battlefield on which battle was fought Aug. 9, 1877, between a small force of United States troops and a much larger force of Nez Perce Indians, resulting in a rout for the Indians.
Cabrillo (kā-brēl'yo).....	California.....	San Diego, Southern Pacific, and Santa Fe systems.	Oct. 14, 1913	38 Stat. 1965.....	1	Of historic interest because of discovery of the territory now partly embraced in the State of California by Juan Rodriguez Cabrillo, who at this point first sighted land on Sept. 28, 1542.
Mound City Group.....	Ohio.....	Chillicothe, B. & O., and N. & W.	Mar. 2, 1923	42 Stat. 2298.....	57	Famous group of prehistoric mounds in Camp Sherman Military Reservation.
Fort Wood.....	New York.....	New York City.....	Oct. 15, 1924	Proc. 1713.....	2.5	Site of the Statue of Liberty.
Castle Pinckney.....	South Carolina.....	Charleston; A. C. L.; S. A. L.; Southern.	do.....	do.....	3.5	Fortification built in 1810 to replace a Revolutionary fort.
Fort Pulaski.....	Georgia.....	Pulaski; Central of Georgia.	do.....	do.....	20	Built in 1810 to replace Fort Greene of the Revolution.
Fort Marion.....	Florida.....	St. Augustine; Florida E. C.	do.....	do.....	18.09	Fort built by Spaniards in 1656.
Fort Matanzas.....	do.....	do.....	do.....	do.....	1	Relic of Spanish Invasion.
Meriwether Lewis.....	Tennessee.....	Hohenwald; N. C. & St. L.	Feb. 6, 1925	Proc. 1730.....	50	Contains grave of Captain Lewis of the Lewis and Clark Expedition.
Fort Niagara.....	New York.....	Lewiston; N. Y. Central.....	Sept. 5, 1925	Proc. 1745.....	.0074	Site for erection of cross to commemorate a cross erected by Father Millet in 1688 on what is now the Fort Niagara Military Reservation.

<sup>1</sup> Set aside by Executive order.

## ORGANIZATION OF THE NATIONAL PARK SERVICE

(Department of the Interior, Washington, D. C.)

Stephen T. Mather, director.  
 Arno B. Cammerer, assistant director.  
 A. E. Demaray, administrative assistant.  
 R. M. Holmes, chief clerk.  
 Isabelle F. Story, editor.

## FIELD SERVICE

## GENERAL

(Yellowstone Park, Wyo.)

Horace M. Albright, field assistant to the director.

## CIVIL ENGINEERING DIVISION

(811 Couch Building, Portland, Oreg.)

Bert H. Burrell, acting chief civil engineer.  
 Merrill F. Daum, locating engineer.

## LANDSCAPE ENGINEERING DIVISION

(730 South Los Angeles Street, Los Angeles, Calif.)

Daniel R. Hull, landscape engineer.

## EDUCATIONAL DIVISION

(957 Regal Road, Berkeley, Calif.)

Ansel F. Hall, chief park naturalist.

## THE NATIONAL PARKS

Crater Lake, C. G. Thomson, superintendent, Medford, Oreg.  
 Glacier, Charles J. Kraebel, superintendent, Belton, Mont.  
 Grand Canyon, J. Ross Eakin, superintendent, Grand Canyon, Ariz.  
 Hawaii, Thomas Boles, superintendent, Volcano House, Hawaii.  
 Hot Springs, Dr. Joseph Bolten, superintendent, Hot Springs, Ark.  
 Lafayette, George B. Dorr, superintendent, Bar Harbor, Me.  
 Mesa Verde, Jesse L. Nusbaum, superintendent, Mancos, Colo.  
 Mount McKinley, Henry P. Karstens, superintendent, McKinley Park, Alaska.  
 Mount Rainier, Owen A. Tomlinson, superintendent, Ashford, Wash.  
 Platt, Forest L. Carter, superintendent, Sulphur, Okla.  
 Rocky Mountain, Roger W. Toll, superintendent, Estes Park, Colo.  
 Sequoia, John R. White, superintendent, Alder Creek headquarters via Three Rivers, Calif.  
 General Grant, John R. White, acting superintendent, Alder Creek headquarters via Three Rivers, Calif.  
 Sullys Hill, Wm. H. Beyer, acting superintendent, Fort Totten, N. Dak.  
 Wind Cave, Roy Brazell, superintendent, Hot Springs, S. Dak.  
 Yellowstone, Horace M. Albright, superintendent, Yellowstone Park, Wyo.  
 Yosemite, W. B. Lewis, superintendent, Yosemite National Park, Calif.  
 Zion, Richard T. Evans, acting superintendent, Springdale, Utah.

## THE NATIONAL MONUMENTS

Frank Pinkley, superintendent of southwestern monuments, Blackwater, Ariz.  
 Aztec Ruin, Earl H. Morris, custodian, Aztec, N. Mex.  
 Capulin Mountain, Homer J. Farr, custodian, Capulin, N. Mex.  
 Carlsbad Cave, W. F. McIlvain, custodian, Carlsbad, N. Mex.  
 Casa Grande, Frank Pinkley, custodian, Blackwater, Ariz.  
 Chaco Canyon, Gus Griffin, custodian, Crown Point, N. Mex.  
 Colorado, John Otto, custodian, Grand Junction, Colo.



Craters of the Moon, Samuel A. Paisley, custodian, Arco, Idaho.  
Devils Tower, John M. Thorn, custodian, Hulett, Wyo.  
El Morro, Evon Z. Vogt, custodian, Ramah, N. Mex.  
Gran Quivira, W. H. Smith, custodian, Gran Quivira, N. Mex.  
Montezuma Castle, Martin L. Jackson, custodian, Camp Verde, Ariz.  
Muir Woods, John T. Needham, custodian, Mill Valley, Calif.  
Natural Bridges, Zeke Johnson, custodian, Blanding, Utah.  
Navajo, John Wetherill, custodian, Kayenta, Ariz.  
Papago Saguaro, J. E. McClain, custodian, Tempe, Ariz.  
Petrified Forest, William Nelson, custodian, Holbrook, Ariz.  
Pinnacles, W. I. Hawkins, custodian, Hollister, Calif.  
Scotts Bluff, A. N. Mathers, Gering, Nebr.  
Sitka, Peter Trierschild, custodian, Sitka, Alaska.  
Tumacacori, Frank Pinkley, acting custodian, Blackwater, Ariz.  
Verendrye, Adolph Larsen, custodian, Sanish, N. Dak.  
Wupatki, J. C. Clarke, custodian, Flagstaff, Ariz.

No superintendent has been appointed for the Lassen Volcanic National Park, nor have custodians been appointed for the Dinosaur, Katmai, Lewis and Clark Cavern, Rainbow Bridge, Shoshone Cavern, Yucca House, Fossil Cycad, Hovenweep, Pipe Spring, or Glacier Bay National Mounments.

# APPENDIX B

## STATISTICS

Visitors to the national parks, 1910-1925.  
 Visitors to some of the national monuments, 1920-1925.  
 Private automobiles entering the national parks during seasons 1918-1925.  
 Automobile and motor cycle licenses issued during seasons 1921-1925.  
 Receipts collected from automobiles and motor cycles during seasons 1921-1925.  
 Statement of appropriations made for and revenues received from the various national parks and national monuments and expenditures made therefrom during the fiscal years 1917-1925, inclusive; also appropriations for the fiscal year 1926.  
 Summary of appropriations for the administration, protection, and improvement of the national parks and national monuments, together with the revenues received for the fiscal years 1917-1926, inclusive.

## STATISTICS

### Visitors to parks, 1910-1925

Name of park	1910	1911	1912	1913	1914	1915	1916	1917
Hot Springs.....	<sup>1</sup> 120,000	<sup>1</sup> 130,000	<sup>1</sup> 135,000	<sup>1</sup> 135,000	<sup>1</sup> 125,000	<sup>1</sup> 115,000	<sup>1</sup> 118,740	<sup>1</sup> 135,000
Yellowstone.....	19,575	23,054	22,970	24,929	20,250	51,895	35,849	35,400
Sequoia.....	2,407	3,114	2,923	3,823	4,667	7,647	10,780	18,510
Yosemite.....	13,619	12,530	10,884	13,735	15,145	33,452	33,390	34,510
General Grant.....	1,178	2,160	2,240	2,756	3,735	10,523	15,360	17,390
Mount Rainier.....	8,000	10,306	8,946	13,501	15,038	35,166	23,989	35,568
Crater Lake.....	<sup>1</sup> 5,000	<sup>1</sup> 4,500	5,235	6,253	7,096	11,371	12,265	11,645
Wind Cave.....	3,387	3,887	3,199	3,988	3,592	2,817	<sup>1</sup> 9,000	16,742
Platt.....	<sup>1</sup> 25,000	<sup>1</sup> 30,000	<sup>1</sup> 31,000	<sup>1</sup> 35,000	<sup>1</sup> 30,000	<sup>1</sup> 20,000	<sup>1</sup> 30,000	<sup>1</sup> 35,000
Sullys Hill.....	<sup>1</sup> 190	<sup>1</sup> 200	<sup>1</sup> 200	<sup>1</sup> 300	<sup>1</sup> 500	<sup>1</sup> 1,000	<sup>1</sup> 1,500	2,207
Mesa Verde.....	250	206	230	280	502	663	1,385	2,223
Glacier.....		<sup>1</sup> 4,000	6,257	12,138	14,168	14,265	12,839	18,387
Rocky Mountain.....						<sup>1</sup> 31,000	<sup>1</sup> 51,000	117,186
Hawaii.....							( <sup>2</sup> )	( <sup>2</sup> )
Lassen Volcanic.....							( <sup>2</sup> )	<sup>1</sup> 8,500
Mount McKinley.....								( <sup>2</sup> )
Grand Canyon.....								
Lafayette.....								
Zion.....								
Total.....	198,606	223,957	229,084	251,703	235,193	334,799	356,097	488,268

Name of park	1918	1919	1920	1921	1922	1923	1924	1925
Hot Springs.....	<sup>1</sup> 140,000	<sup>1</sup> 160,490	<sup>1</sup> 162,850	<sup>1</sup> 130,968	<sup>1</sup> 106,164	<sup>1</sup> 112,000	<sup>1</sup> 164,175	<sup>1</sup> 265,500
Yellowstone.....	21,275	62,261	79,777	81,651	98,223	138,352	144,158	154,282
Sequoia.....	15,001	30,443	31,508	28,263	27,514	30,158	34,468	46,677
Yosemite.....	33,497	58,362	68,906	91,513	100,506	130,046	105,894	209,166
General Grant.....	15,496	21,574	19,661	30,312	50,456	46,230	35,020	40,517
Mount Rainier.....	43,901	55,232	56,491	55,771	70,371	123,708	161,473	173,004
Crater Lake.....	13,231	16,645	20,135	28,617	33,016	52,017	64,312	65,018
Platt.....	<sup>1</sup> 36,000	<sup>1</sup> 25,000	<sup>1</sup> 38,000	<sup>1</sup> 60,000	<sup>1</sup> 70,000	<sup>1</sup> 117,710	<sup>1</sup> 134,874	<sup>1</sup> 143,380
Wind Cave.....	14,431	26,312	27,023	28,336	31,016	41,505	52,166	69,267
Sullys Hill.....	4,188	4,026	9,341	9,100	<sup>1</sup> 9,548	8,478	8,035	9,183
Mesa Verde.....	2,058	2,287	2,890	3,003	4,251	5,236	7,109	9,043
Glacier.....	9,086	18,956	22,449	19,736	23,935	33,988	33,372	40,063
Rocky Mountain.....	101,497	169,492	240,966	<sup>1</sup> 273,737	<sup>3</sup> 219,164	218,000	224,211	233,912
Hawaii.....	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	<sup>1</sup> 16,071	27,750	41,150	52,110	64,155
Lassen Volcanic.....	<sup>1</sup> 2,000	<sup>1</sup> 2,500	<sup>1</sup> 2,000	<sup>1</sup> 10,000	<sup>1</sup> 10,000	<sup>1</sup> 9,500	<sup>1</sup> 12,500	112,596
Mount McKinley.....	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	<sup>4</sup> 7	<sup>4</sup> 34	<sup>4</sup> 62	206
Grand Canyon.....		37,745	67,315	67,485	84,700	102,166	108,256	134,053
Lafayette.....		<sup>1</sup> 64,000	<sup>1</sup> 66,500	<sup>1</sup> 69,836	73,779	64,200	71,758	73,673
Zion.....			3,692	2,937	4,109	6,408	8,400	16,817
Total.....	451,661	755,325	919,504	1,007,335	1,044,502	1,280,886	1,422,353	1,760,512

<sup>1</sup> Estimated.

<sup>2</sup> No record

<sup>3</sup> Indicated loss in travel from 1921 due largely to better methods of checking and estimating employed.

<sup>4</sup> Actual park visitors; many miners and prospectors passed through park.

*Visitors to some of the national monuments in 1920-1925*<sup>1</sup>

Name	1920	1921	1922	1923	1924	1925
Aztec Ruin (New Mexico)				6,234	5,968	<sup>2</sup> 7,000
Capulin Mountain (New Mexico)	<sup>2</sup> 3,200	<sup>2</sup> 3,000	<sup>2</sup> 3,000	<sup>2</sup> 1,000	<sup>2</sup> 7,000	<sup>2</sup> 7,000
Carlsbad Cave (New Mexico)					<sup>2</sup> 1,280	1,794
Casa Grande (Arizona)	7,720	6,296	5,068	6,787	9,583	13,587
Chaco Canyon (New Mexico)						<sup>2</sup> 2,000
Colorado (Colorado)	<sup>2</sup> 1,200	<sup>2</sup> 5,500	<sup>2</sup> 6,000	<sup>2</sup> 7,000	<sup>2</sup> 8,000	<sup>2</sup> 9,000
Craters of the Moon (Idaho)						3,349
Devils Tower (Wyoming)		<sup>2</sup> 7,000	<sup>2</sup> 8,500	<sup>2</sup> 3,000	<sup>2</sup> 7,800	8,450
El Morro (New Mexico)	<sup>2</sup> 2,000	<sup>2</sup> 3,000	<sup>2</sup> 2,500	<sup>2</sup> 2,500	<sup>2</sup> 3,200	<sup>2</sup> 1,800
Gran Quivira (New Mexico)						<sup>2</sup> 1,000
Hovenweep (Utah-Colorado)						250
Katmai (Alaska)				15	17	
Montezuma Castle (Arizona)	<sup>2</sup> 2,500	<sup>2</sup> 4,500	<sup>2</sup> 6,000	<sup>2</sup> 7,400	<sup>2</sup> 7,500	<sup>2</sup> 9,000
Muir Woods (California)	<sup>2</sup> 77,577	<sup>2</sup> 87,400	<sup>2</sup> 90,370	91,253	92,391	93,643
Natural Bridges (Utah)				20	62	
Navajo (Arizona)	64	65	112		85	200
Papago Saguaro (Arizona)	<sup>2</sup> 5,000	<sup>2</sup> 3,000	<sup>2</sup> 8,000	<sup>2</sup> 6,000	<sup>2</sup> 10,000	<sup>2</sup> 30,000
Petrified forest (Arizona)	<sup>2</sup> 30,390	<sup>2</sup> 32,700	<sup>2</sup> 31,338	45,475	42,781	55,227
Pinnacles (California)				<sup>2</sup> 6,500	8,973	63,522
Pipe Spring (Arizona)						<sup>2</sup> 4,000
Rainbow Bridge (Utah)				142	115	250
Scotts Bluff (Nebraska)	<sup>2</sup> 5,000	<sup>2</sup> 6,000	<sup>2</sup> 6,000	<sup>2</sup> 20,000	<sup>2</sup> 35,000	<sup>2</sup> 24,000
Tumacacori (Arizona)	<sup>2</sup> 4,300	<sup>2</sup> 5,000	<sup>2</sup> 5,100	<sup>2</sup> 6,000	<sup>2</sup> 8,800	<sup>2</sup> 10,500
Verendrye (North Dakota)		<sup>2</sup> 1,000		<sup>2</sup> 3,500		<sup>2</sup> 1,400
Wupatki (Arizona)						<sup>2</sup> 500
Yucca House (Colorado)						<sup>2</sup> 100
Total	138,951	164,461	171,988	212,826	248,555	347,572

<sup>1</sup> No records for other 6 national monuments.<sup>2</sup> Estimated.<sup>3</sup> Opened to public June 1, 1924.*Private automobiles entering the national parks during seasons 1918-1925*

Name of park	1918	1919	1920	1921	1922	1923	1924 <sup>1</sup>	1925
Yellowstone	4,734	10,737	13,586	15,736	18,253	27,359	30,689	33,068
Sequoia <sup>2</sup>	1,627	3,852	5,657	7,139	7,886	9,796	11,032	14,273
Yosemite	7,621	12,109	13,418	18,947	19,583	27,233	32,814	49,229
General Grant	2,438	3,366	4,710	6,545	12,010	12,036	9,118	11,108
Mount Rainier	7,602	10,434	10,814	12,271	17,149	27,655	38,351	39,860
Crater Lake	3,105	4,637	5,158	7,892	9,429	15,377	19,301	19,451
Wind Cave <sup>3</sup>	4,815	8,240	7,686	9,078	10,096	13,570	17,200	22,598
Platt <sup>3</sup>				21,848	<sup>4</sup> 30,000	<sup>4</sup> 50,000	<sup>4</sup> 57,400	<sup>4</sup> 60,000
Sullys Hill								2,271
Mesa Verde	371	436	570	651	969	1,255	1,803	2,197
Glacier	1,065	1,697	2,009	2,614	2,416	5,599	6,756	7,585
Rocky Mountain <sup>3</sup>	<sup>4</sup> 20,588	<sup>4</sup> 33,638	<sup>4</sup> 50,562	<sup>4</sup> 57,438	<sup>4</sup> 52,112	<sup>4</sup> 51,800	<sup>4</sup> 53,696	<sup>4</sup> 58,057
Hawaii <sup>3</sup>						8,025	10,150	12,650
Lassen Volcanic								2,646
Grand Canyon <sup>3</sup>		1,575	3,260	5,104	7,890	11,731	13,052	19,910
Lafayette <sup>3</sup>		<sup>4</sup> 7,000	<sup>4</sup> 10,000	9,958	8,650	8,600	12,561	9,381
Zion <sup>3</sup>			644	604	662	1,446	1,993	3,928
Total	53,966	97,721	128,074	175,825	197,105	271,482	315,916	368,212

<sup>1</sup> Automobiles entering parks with or without licenses, to and including Sept. 30, 1924.<sup>2</sup> License required only for Giant Forest Road.<sup>3</sup> No license required.<sup>4</sup> Estimated.



*Automobile and motor-cycle licenses issued during seasons 1921-1925*

Name of park <sup>1</sup>	1921		1922		1923		1924		1925 <sup>2</sup>	
	Auto-mobiles	Motor cycles	Auto-mobiles	Motor cycles	Auto-mobiles	Motor cycles	Auto-mobiles	Motor cycles	Auto-mobiles	Motor cycles
Yellowstone.....	11,552	58	20,158	149	25,357	131	28,912	158	31,488	1
Sequoia <sup>3</sup> .....	3,041	23	3,197	1	4,350	-----	3,684	-----	4,312	-----
Yosemite.....	15,250	131	16,335	134	28,587	136	17,696	89	23,203	-----
General Grant.....	6,300	-----	6,217	-----	8,037	-----	6,524	-----	7,023	-----
Mount Rainier.....	8,824	60	10,906	118	17,208	299	19,267	321	21,753	-----
Crater Lake.....	5,821	41	8,101	42	10,864	61	16,033	44	15,471	-----
Mesa Verde.....	665	2	967	-----	1,146	2	1,812	2	2,075	-----
Glacier.....	3,414	2	1,548	1	4,900	5	3,981	2	6,039	-----
Total.....	54,867	317	67,429	445	100,449	634	97,809	616	111,364	2

<sup>1</sup> No licenses required for Zion Wind Cave, Hot Springs, Platt, Hawaii, Lassen Volcanic, Sullys HI, Rocky Mountain, Grand Canyon, and Lafayette National Parks. No roads in Mount McKinley Park.

<sup>2</sup> Number of licenses formally reported to Washington, to and including Sept. 30, 1925.

<sup>3</sup> Licenses required only for Giant Forest Road.

<sup>4</sup> Includes 5,360 autos in 1919, 1,419 in 1920, 1,210 in 1921, 665 in 1922, 525 in 1923, 276 in 1924, and 319 in 1925. The owner of which surrendered Yosemite Valley Highway Association certificates in lieu of payment of entrance fee.

<sup>5</sup> Includes 399 complimentary permits in 1922, 436 in 1923, and 244 in 1924.

<sup>6</sup> Includes 1 complimentary permit.

Licenses not required in certain parks because of small road mileage or unimproved condition of road (see footnote 1). Licenses also not required for travel on unimproved roads in other parks. No charge for license issued for operating cars on official business.

*Receipts collected from automobiles and motor cycles during seasons 1921-1925*

Name of park <sup>1</sup>	1921	1922	1923	1924	1925 <sup>2</sup>
Yellowstone.....	\$86,469.50	\$150,287.00	\$189,375.00	\$217,235.00	236,520.
Sequoia <sup>3</sup> .....	7,625.50	7,995.00	10,875.00	9,210.00	10,780.
Yosemite.....	70,055.00	81,128.00	101,312.00	87,278.00	114,556.
General Grant.....	3,146.00	3,063.50	3,975.00	3,287.00	3,511.
Mount Rainier.....	22,112.50	27,330.50	43,309.00	48,488.50	54,405.
Crater Lake.....	14,593.50	20,404.50	27,223.50	40,130.00	38,714.
Mesa Verde.....	998.50	1,450.50	1,691.50	2,719.00	3,114.
Glacier.....	5,488.50	2,303.00	7,926.50	5,528.50	9,338.
Total.....	210,488.50	293,962.00	385,687.50	413,876.00	470,940.

<sup>1</sup> No licenses required for Zion Wind Cave, Hot Springs, Platt, Hawaii, Lassen Volcanic, Sullys HI, Rocky Mountain, Grand Canyon, and Lafayette National Parks. No roads in Mount McKinley Park.

<sup>2</sup> Received in Washington to and including Sept. 30, 1925.

<sup>3</sup> License required only for Giant Forest Road.

*Statement of appropriations made for, and revenues received from, the various national parks and national monuments, and expenditures made therefrom during the fiscal years 1917-1925,<sup>1</sup> inclusive; also appropriations for the fiscal year 1926*

Name of the national park	Appropriations		Revenues	
	Appropriated	Expended	Received	Expended
<b>Hot Springs:</b>				
1917.....			\$35,611.75	\$31,302.98
1918.....			28,883.44	42,822.02
1919.....	<sup>2</sup> \$140,000.00	\$140,000.00	52,109.15	32,130.36
1920.....			45,682.85	35,710.33
1921 (deficiency).....	60,000.00	60,000.00	57,807.00	74,021.19
1922.....			55,339.15	85,043.85
1923.....	63,900.00	63,289.88	56,669.16	( <sup>3</sup> )
1924.....	67,600.00	67,195.39	44,769.53	
1925.....	78,000.00	} \$85,222.98	\$60,577.70	
1925 (deficiency).....	11,800.00			
1926.....	72,100.00			
<b>Yellowstone:</b>				
1917.....	8,500.00	8,500.00	54,795.69	53,775.61
1918.....	10,500.00	9,645.82	71,393.56	96,812.34
1919.....	334,920.00	332,583.03	42,775.50	( <sup>3</sup> )
1919.....	<sup>4</sup> 3,259.48	539.44		
1920.....	255,500.00	253,577.15	120,027.61	
1920 (deficiency).....	71,026.64	71,026.64		
1921.....	278,000.00	} 285,992.28	138,806.84	
1921 (deficiency).....	8,000.00			
1922.....	350,000.00	348,746.54	165,014.53	
1923.....	361,800.00	361,687.86	203,140.02	
1924.....	368,000.00	} 394,926.67	299,132.97	
1924 (deficiency).....	27,700.00			
1925.....	372,800.00	} 394,590.99	318,861.60	
1925 (deficiency).....	24,103.00			
1926.....	396,000.00			
<b>Sequoia:</b>				
1917.....	22,300.00	15,605.28	} 10,326.60	415.04
1918.....	<sup>5</sup> 50,000.00	50,000.00		
1919.....	25,000.00	24,578.71	13,402.53	25,508.45
1919.....	30,510.00	30,420.98	9,772.52	( <sup>3</sup> )
1920.....	35,000.00	34,824.54	15,899.00	
1921.....	36,000.00	35,732.79	19,584.99	
1922.....	86,000.00	85,961.84	20,086.27	
1923.....	78,000.00	77,671.62	23,917.22	
1924.....	120,000.00	119,817.64	24,220.21	
1925.....	136,000.00	} 141,066.42	19,981.08	
1925 (deficiency).....	5,810.00			
1926.....	71,710.00			
<b>Yosemite:</b>				
1917.....	250,000.00	249,987.45	53,500.66	55,098.45
1918.....	235,000.00	226,368.29	65,865.65	88,975.62
1919.....	255,000.00	254,294.64	57,520.03	( <sup>3</sup> )
1920.....	200,000.00	197,611.29	85,601.54	
1921.....	300,000.00	} 300,645.44	95,894.47	
1921 (deficiency).....	3,000.00			
1922.....	300,000.00	295,079.94	131,797.51	
1923.....	280,000.00	278,218.50	148,860.60	
1924.....	295,000.00	<sup>6</sup> 290,753.24	173,732.28	
1925.....	309,000.00	} 324,511.05	137,200.14	
1925 (deficiency).....	21,414.00			
1926.....	252,714.00			

<sup>1</sup> For statement of appropriations and revenues prior to 1917 see 1920 Annual Report, pp. 354-358.  
<sup>2</sup> Made available during fiscal years 1920 and 1921 by sundry civil acts approved July 19, 1919 (41 Stat. 204), and June 5, 1920 (41 Stat. 918).

<sup>3</sup> Expenditure of revenue for park purposes not authorized. Sundry civil act of June 12, 1917 (40 Stat. 153); Hot Springs, act of May 24, 1922 (42 Stat. 590).

<sup>4</sup> \$1,000 transferred from Hot Springs to Zion.

<sup>5</sup> Includes \$15,855 from sale of lots.

<sup>6</sup> Unexpended balance of 1918 War Department appropriation of \$20,000 made available under Interior Department during 1919. Sundry civil act of July 1, 1918 (40 Stat. 678).

<sup>7</sup> \$200 transferred from Yellowstone to Glacier.

<sup>8</sup> For purchase of private holdings.

<sup>9</sup> \$3,000 transferred from Yosemite to Mount Rainer, and \$1,000 transferred from Yosemite to Mesa Verde.

*Statement of appropriations made for, and revenues received from, the various national parks and national monuments, and expenditures made therefrom during the fiscal years 1917-1925, inclusive; also appropriations for the fiscal year 1926—Continued*

Name of the national park	Appropriations		Revenues	
	Appropriated	Expended	Received	Expended
<b>General Grant:</b>				
1917.....	\$2,000.00	\$1,999.55	\$1,153.78	\$536.97
1918.....	2,000.00	1,999.97	1,801.63	3,951.88
1919.....	4,500.00	4,481.51	1,063.90	( <sup>3</sup> )
1920.....	6,000.00	5,992.79	1,870.83	
1921.....	5,300.00	5,300.00	2,663.37	
1922.....	6,000.00	5,981.24	3,480.45	
1923.....	6,500.00	6,419.88	3,180.16	
1924.....	50,000.00	49,937.82	4,847.73	
1925.....	14,175.00	15,175.95	2,907.54	
1925 (deficiency).....	1,180.00			
1926.....	12,180.00			
<b>Mount Rainier:</b>				
1917.....	30,000.00	29,999.19	14,346.80	17,617.04
1918.....	75,000.00	74,846.67	17,241.25	34,715.96
1919.....	24,600.00	24,552.28	17,336.47	( <sup>3</sup> )
1920.....	32,500.00	32,446.01	22,153.76	
1921.....	40,000.00	39,819.34	24,967.79	
1922.....	150,000.00	149,497.31	22,286.59	
1923.....	106,800.00	105,721.05	29,133.17	
1924.....	133,000.00	135,813.76	43,014.33	
1924 (deficiency).....	10 13,000.00			
1925.....	100,000.00	116,361.80	51,395.58	
1925 (deficiency).....	5,230.00			
1926.....	106,500.00			
<b>Crater Lake:</b>				
1917.....	8,000.00	7,999.88	4,565.25	
1918.....	15,000.00	14,738.44	5,505.72	
1919.....	13,225.00	13,203.84	5,958.21	( <sup>3</sup> )
1920.....	28,225.00	28,162.05	8,327.73	
1921.....	25,300.00	25,223.40	9,784.98	
1922.....	25,300.00	25,290.41	15,277.53	
1923.....	32,000.00	31,787.77	18,139.75	
1924.....	35,000.00	34,993.96	30,495.93	
1925.....	30,700.00	32,623.41	39,789.49	
1925 (deficiency).....	1,980.00			
1926.....	35,980.00			
<b>Platt:</b>				
1917.....	8,000.00	8,000.00	434.11	138.28
1918.....	7,180.00	7,179.84	1,010.40	1,699.88
1919.....	7,500.00	7,485.05	482.63	( <sup>3</sup> )
1920.....	6,000.00	5,980.24	486.59	
1921.....	9,000.00	8,900.70	726.20	
1922.....	7,500.00	7,238.26	519.80	
1923.....	7,500.00	7,325.62	65.30	
1924.....	10,000.00	9,992.13	74.14	
1925.....	10,000.00	11,780.97	60.50	
1925 (deficiency).....	1,920.00			
1926.....	17,920.00			
<b>Wind Cave:</b>				
1917.....	2,500.00	2,499.87	1,632.60	1,013.04
1918.....	2,500.00	2,498.40	4,082.60	8,006.53
1919.....	4,000.00	3,988.77	2,533.15	( <sup>3</sup> )
1920.....	4,000.00	3,987.24	3,714.15	
1921.....	5,000.00	4,971.55	2,913.20	
1922.....	7,500.00	7,500.00	3,785.25	
1923.....	7,500.00	7,443.84	3,869.00	
1924.....	10,000.00	9,975.51	3,856.50	
1925.....	10,000.00	10,954.71	4,232.61	
1925 (deficiency).....	960.00			
1926.....	10,960.00			
<b>Mesa Verde:</b>				
1917.....	10,000.00	9,999.00	130.14	( <sup>11</sup> )
1918.....	10,000.00	9,913.05	2,763.75	
1919.....	18,000.00	17,022.44	3,348.66	
1920.....	11,000.00	10,959.69	3,317.95	
1921.....	14,000.00	13,929.71	3,771.35	
1922.....	16,400.00	16,339.30	1,273.72	
1923.....	43,000.00	42,812.62	3,690.10	

<sup>3</sup> Expenditure of revenue for park purposes not authorized. Sundry civil act of June 12, 1917 (40 Stat. 153), and act of May 24, 1922 (42 Stat. 590).

<sup>9</sup> \$3,000 transferred from Yosemite to Mount Rainer, and \$1,000 transferred from Yosemite to Mesa Verde.

<sup>10</sup> Made available during 1925, act of Mar. 4, 1925 (43 Stat. 1331).

<sup>11</sup> Expenditure of revenues Mesa Verde Park for park purposes not authorized by statute.



*Statement of appropriations made for, and revenues received from, the various national parks and national monuments, and expenditures made therefrom during the fiscal years 1917-1925, inclusive; also appropriations for the fiscal year 1926—Continued*

Name of the national park	Appropriations		Revenues	
	Appropriated	Expended	Received	Expended
Mesa Verde—Continued.				
1924.....	\$35,000.00	} \$36,710.99	\$4,071.65	-----
1924 (deficiency).....	3,000.00			
1925.....	42,500.00	} 43,169.93	3,599.45	-----
1925 (deficiency).....	1,895.00			
1926.....	42,835.00			
Glacier:				
1917.....	110,000.00	108,148.16	3,202.40	\$1,352.75
1918.....	115,000.00	114,362.82	4,438.22	9,026.86
1919.....	80,000.00	79,958.69	2,624.53	(3)
1920.....	85,000.00	85,000.00	7,253.85	-----
1920 (deficiency).....	81,849.12	81,572.94		
1921.....	95,000.00	} 107,847.30	10,513.20	-----
1921 (deficiency).....	12,564.09			
1922.....	195,000.00	194,803.03	6,082.71	-----
1923.....	178,700.00	178,515.70	10,732.67	-----
1924.....	225,000.00	} 227,167.13	19,759.23	-----
1925.....	281,000.00			
1925 (deficiency).....	9,260.00	} 290,221.44	15,328.71	-----
1926.....	184,960.00			
Rocky Mountain:				
1917.....	10,000.00	9,964.24	871.27	(14)
1918.....	10,000.00	9,922.10	598.75	-----
1919.....	10,000.00	9,993.94	307.50	-----
1920.....	10,000.00	9,924.85	1,507.78	-----
1921.....	40,000.00	39,945.40	537.25	-----
1922.....	65,000.00	64,923.10	2,695.41	-----
1923.....	73,900.00	73,153.99	3,077.08	-----
1924.....	74,280.00	74,088.27	582.38	-----
1924 (deficiency).....	10 26,171.00	} 122,805.78	3,183.83	-----
1925.....	93,000.00			
1925 (deficiency).....	4,540.00			
1926.....	84,660.00			
Hawaii:				
1919.....	750.00	731.40		-----
1920.....	750.00	747.52		-----
1921.....	1,000.00	125.00		-----
1922.....	10,000.00	9,645.16		-----
1923.....	10,000.00	9,969.03	775.00	-----
1924.....	10,000.00	9,691.05	1,460.00	-----
1925.....	10,000.00	} 9,377.05	760.00	-----
1925 (deficiency).....	1,260.00			
1926.....	15,560.00			
Lassen Volcanic:				
1917.....			81.25	(3)
1918.....			118.05	-----
1921.....	2,500.00	2,410.90		-----
1922.....	3,000.00	2,922.41		-----
1923.....	3,000.00	2,963.42	228.66	-----
1924.....	3,000.00	2,927.16	277.27	-----
1925.....	3,000.00	} 2,914.93	170.96	-----
1925 (deficiency).....	100.00			
1926.....	10,000.00			
Grand Canyon:				
1919.....			525.03	(3)
1920.....	40,000.00	39,874.27	399.32	-----
1921.....	60,000.00	59,948.45	8,305.43	-----
1922.....	100,000.00	99,966.55	4,872.02	-----
1923.....	75,000.00	73,906.35	7,508.72	-----
1924.....	125,400.00	} 123,998.40	12,655.42	-----
1925 (without year).....	100,000.00			
1925.....	116,000.00	} 118,729.19	12,550.06	-----
1925 (deficiency).....	4,360.00			
1926.....	192,360.00			

<sup>1</sup> Expenditure of revenue for park purposes not authorized. Sundry civil act of June 12, 1917 (40 Stat. 153).

<sup>10</sup> Made available during 1925, act of Mar. 4, 1925 (43 Stat. 1331).

<sup>12</sup> \$1,000 from Yosemite and \$1,000 from Zion transferred to Mesa Verde, and \$1,900 transferred from Mesa Verde to Glacier.

<sup>13</sup> \$800 from Grand Canyon, \$200 from Yellowstone, and \$1,900 from Mesa Verde transferred to Glacier.

<sup>14</sup> Expenditure of revenues from Rocky Mountain Park for park purposes not authorized by statute.

<sup>15</sup> \$800 transferred from Grand Canyon to Glacier.

<sup>16</sup> \$500 from Grand Canyon and \$1,000 from Hot Springs transferred to Zion.

*Statement of appropriations made for, and revenues received from, the various national parks and national monuments, and expenditures made therefrom during the fiscal years 1917-1925, inclusive; also appropriations for the fiscal year 1926—Continued*

Name of the national park	Appropriations		Revenues	
	Appropriated	Expended	Received	Expended
Mount McKinley:				
1922.....	\$8,000.00	\$7,792.88		
1923.....	8,000.00	7,850.61		
1924.....	8,000.00	7,760.82		
1925.....	11,020.00	11,533.00	\$68.93	(3)
1925 (deficiency).....	700.00			
1926.....	13,800.00			
Lafayette:				
1919.....	17 10,000.00	9,972.42		
1920.....	10,000.00	9,930.06		
1921.....	20,000.00	19,997.73		
1922.....	25,000.00	24,992.99		
1923.....	25,000.00	24,819.20		
1924.....	30,000.00	29,960.48		
1925.....	34,700.00	36,995.82		
1925 (deficiency).....	2,820.00			
1926.....	34,190.00			
Zion:				
1917 (deficiency).....	15,000.00	14,963.81		
1920.....			511.50	(3)
1921.....	7,300.00	8,825.96	524.00	
1921 (deficiency).....	1,585.07			
1922.....	10,000.00	9,968.62	414.95	
1923.....	10,000.00	9,727.39	584.37	
1923-24 (deficiency).....	133,000.00	18 143,070.65	913.25	
1924.....	13,750.00			
1925.....	15,190.00	16 16,790.71	195.80	
1925 (deficiency).....	1,560.00			
1926.....	20,000.00			
Protection of national monuments:				
1917.....	3,500.00	2,586.66		
1918.....	5,000.00	4,832.70		(19)
1919.....	10,000.00	9,473.10	225.00	
1920.....	8,000.00	7,802.92	320.75	
1921.....	8,000.00	7,838.99	123.50	
1922.....	12,500.00	12,019.98	123.20	
1923.....	12,500.00	11,385.55	39.00	
1924.....	12,500.00	11,385.55	135.38	
1925.....	20,750.00	12,424.33	23.50	
1925 (deficiency).....	1,230.00	20,343.75	57.00	
1926.....	46,980.00			
Casa Grande National Monument:				
1917.....	900.00	(20)		
1918.....	900.00	(20)		
1919.....	900.00	(20)		
Improvement of Navajo National Monument, Ariz.: 1917.....	21 3,000.00	1,962.69		
National Park Service:				
1917.....	3,666.67	2,513.62		
1918.....	17,600.00	17,413.33		
1919.....	19,200.00	19,177.50		
1920.....	22,220.00	21,524.46		
1921.....	27,420.00	27,090.59		
1922.....	31,020.00	30,957.72		
1923.....	32,420.00	32,383.50		
1924.....	33,200.00	32,922.67		
1925.....	44,000.00	46,632.92		
1925 (deficiency).....	2,700.00			
1926.....	51,000.00			
Fighting forest fires:				
1922.....	25,000.00	9,618.30		
1923.....	25,000.00	17,764.16		
1924.....	25,000.00	6,526.02		
1925.....	20,000.00	20,000.00		
Emergency reconstruction:				
1925.....	20,000.00	16,818.17		

<sup>3</sup> Expenditure of revenue for park purposes not authorized. Sundry civil act of June 12, 1917 (40 Stat. 163).

<sup>16</sup> \$500 from Grand Canyon and \$1,000 from Hot Springs transferred to Zion.

<sup>17</sup> Appropriation for 1919 made under the name of Sieur de Monts National Monument.

<sup>18</sup> \$1,000 transferred from Zion to Mesa Verde.

<sup>19</sup> Expenditure of revenue for monument purposes not authorized.

<sup>20</sup> Expended under the direction of the Commissioner of the General Land Office.

<sup>21</sup> Expended under direction of Smithsonian Institution.

*Statement of appropriations made for, and revenues received from, the various national parks and national monuments, and expenditures made therefrom during the fiscal years 1917-1925, inclusive; also appropriations for the fiscal year 1926—Continued*

Name of the national park	Appropriations		Revenues	
	Appropriated	Expended	Received	Expended
Emergency reconstruction and fighting forest fires:				
1926.....	\$40,000.00			
Accounting services:				
1923.....	6,000.00	\$5,216.60		
1924.....	6,000.00	5,992.11		
1925.....	6,000.00	5,530.52		
1926.....	6,000.00			
Construction of roads and trails:				
1925 (deficiency).....	1,000,000.00	1,000,000.00		
1926.....	1,500,000.00			
Insect control:				
1925-26 (deficiency).....	25,000.00			

*Summary of appropriations for the administration, protection, and improvement of the national parks and national monuments, together with the revenues received, for the fiscal years 1917<sup>1</sup>-1926, inclusive*

Year	Department	Appropriation	Revenues
1917	Interior Department.....	\$537,366.67	
	War Department.....	247,200.00	
		\$784,566.67	\$180,652.30
1918	Interior Department.....	530,680.00	
	War Department.....	217,500.00	
		748,180.00	<sup>2</sup> 217,330.55
1919	Interior Department.....	963,105.00	
	War Department.....	50,000.00	
		1,013,105.00	196,678.03
1920		907,070.76	316,877.96
1921		1,058,969.16	396,928.27
1922		1,433,220.00	432,964.89
1923		1,446,520.00	513,706.36
1924		1,892,601.00	663,886.32
1925		2,982,657.00	670,920.98
1926		3,243,409.00	

<sup>1</sup> For summary of appropriations and revenues prior to 1917 see 1920 Annual Report, p. 359.

<sup>2</sup> The revenues from the various national parks were expendable during the years 1904 to 1918, inclusive, with the exception of those received from Crater Lake, Mesa Verde, and Rocky Mountain National Parks, the revenues from which were turned into the Treasury to the credit of miscellaneous receipts.



## APPENDIX C

### REPORTS OF OFFICERS IN CHARGE OF THE NATIONAL PARKS AND ENGINEERING DIVISIONS

#### HOT SPRINGS NATIONAL PARK

Dr. JOSEPH BOLTEN, Superintendent, Hot Springs, Ark.

##### GENERAL STATEMENT

The total receipts of the pay bathhouses were \$428,401.31 as compared with \$396,604.47 for the fiscal year 1924.

The net profits reported for 17 pay bathhouses aggregated \$109,015.11. Three bathhouses reported deficits amounting to \$3,877.46. The total profits, including deficits, for all bathhouses last year were \$83,316.54.

The baths given were as follows: Complimentary, 2,983; paid baths, 647,240; at the United States free bathhouse, 73,841; at the Leo N. Levi Memorial Hospital Bathhouse, 5,419, making a grand total of 729,483 baths, as compared with a grand total of 679,396 given during the previous year.

The springs, 46 in number, supply 850,000 gallons of hot water daily, which is collected and distributed to the Army and Navy General Hospital, the United States free bathhouse, the Leo N. Levi Memorial Hospital Bathhouse, and 19 pay bathhouses, all of which are under government supervision.

##### ADMINISTRATION

The park is in charge of the superintendent, who has supervision over all matters pertaining to the park and its management, the general sanitary control of all bathhouses receiving hot water, and control over all employees connected with the bathhouses.

The park personnel is divided into the following departments; Administrative, police, maintenance, and free bathhouse and clinic.

On December 1, 1924, the park took over actively the public camp grounds located at the east base of Hot Springs Mountain. An act was passed by the Arkansas Legislature giving to the Federal Government exclusive criminal jurisdiction over the public camp grounds.

##### RECEIPTS AND EXPENDITURES

###### Receipts:

Water rent.....	\$37, 620. 00
Ground rent.....	300. 00
Privilege fees—	
Registered physicians' continuance fee.....	\$4, 470. 00
Physicians' examination fee.....	90. 00
Physicians' registration fee.....	30. 00
Bath attendants' certification fee.....	1, 727. 00
Masseurs' certification fee.....	493. 00
	6, 810. 00
Miscellaneous—	
Sale of attendants' badges.....	7. 70
Commissary concession.....	5. 00
	12. 70

Total deposited to credit of miscellaneous receipts..... 44, 742. 70

All but one of the remaining city lots belonging to the park were disposed of at public auction, \$20,035 being derived from the sales. This amount was deposited to the credit of a special fund available for improvement of the park. The unexpended balance of this fund is \$20,308.82.

The following expenditures were made by the park from appropriations:

For administration, protection, and maintenance-----	\$66,757.75
For construction of physical improvements-----	17,055.49
For construction and reconstruction of roads (from the National Park Service road budget)-----	25,600.00
Total expenditures-----	\$109,413.24

#### CONSTRUCTION, MAINTENANCE, AND REPAIRS

*Free bathhouse building.*—A 5-foot concrete walk, 600 feet long, was laid around the building. The hot-air ventilating ducts were patched and plastered, and other repairs made to the hot-air heating system. Under a 1924 contract 1,800 square feet of radiation was installed to supplement the hot-air system. Screen doors and windows were installed throughout the building where required.

The walls, ceilings, and floors of the clinic, and a number of rooms and the lobby of the bathhouse were painted. Leaks in the bath pools were repaired by the use of chemicals. Gutters and downspouts were repaired and new downspouts installed.

*Office building and pumphouse.*—The exterior was painted and the interior of the pumphouse was whitewashed. The heating plant was overhauled and repaired. A new floor was laid in one room of the building, and another room was divided into two to provide storage space for office supplies and records. New screen doors and windows were installed.

*Superintendent's residence.*—A screened sleeping porch was built. A new hot-water heater was installed and the hot-water pipes were replaced. The heating system was completely overhauled. The walls of the hall, kitchen, and pantry were painted and all floors varnished.

*Fountain Street residence.*—A screened sleeping porch was built. A partition was built to shut off the second floor from the first floor, to improve heating conditions. A new bathroom was installed on the first floor.

*Barns.*—Two new stalls were built. A small brick addition was made for storage of gasoline and oil and a gasoline pump and 550-gallon gasoline storage tank installed. Work was started on the service road back of the barn.

*Greenhouse.*—An addition 12 by 36 feet was made. A new heating plant was installed.

*Whittington Park buildings.*—Replaced gutters and repaired porch of keeper's house. Pavilions were repaired and painted.

*Grounds.*—Crêpe myrtle was planted along Bath House Row and on the free bathhouse grounds. Rose cuttings and flower bulbs were planted at various places on the reservation lawns. About 60 maple and elm trees were planted along the lower slopes of Hot Springs Mountain and in front of the barn. A shrubbery nursery was started at the greenhouse, and privet, crêpe myrtle, and other varieties of shrubs have been propagated, to the estimated value of five or six hundred dollars.

A 600-square-foot retaining wall was built in front of the barn and fill made, to enlarge the driveway and help in masking the building. Drainage ditches, gutters, and tile were repaired in places and new drains built. There were hauled and spread on the lawns 179 yards of alluvial soil. Several square sections of the concrete walk on Bath House Row were replaced. An old, obsolete hot-water reservoir was demolished and the space it occupied was filled and grassed. The Arlington Hotel Co. completed the parking of its former site at the north end of Bath House Row, grass being sowed, shrubbery and decorative trees planted, and gravel and concrete walks laid.

*Roads.*—Under an allotment from the National Park Service road budget, the work of reconstructing the park roads was carried on by hired labor. Nearly all of the Hot Springs Mountain roads had been constructed to double travel width and the reconstruction of the loop road on North Mountain was completed. All equipment necessary for completing the construction and reconstruction work was purchased. In view of the construction work, the maintenance of the roads was curtailed to the minimum necessities.

*Trails.*—Concrete cross-drains and tile were installed where needed to protect the trails from excessive wash. The trails were repaired, cleared, and put in excellent condition. A trail about 100 feet long was built on North



Mountain to a large rock about 30 feet above the old trail, giving a commanding view of the surrounding country.

*Electric lighting system.*—Six new five-cluster-light metal standards donated by the Arlington Hotel Co. were erected on the Arlington Park and connected up by 750 feet of three-conductor cable. All standards on Bath House Row, Hot Springs Mountain, and Whittington Park were painted. New reflectors were purchased for the road-lighting system on Hot Springs Mountain.

*Water system.*—A new cellar drainer was installed in the sump of the main reservoir. The overflow pipe from this reservoir became obstructed, was dug up and a new 6-inch line installed. A new overflow line was also laid from the Superior Reservoir. A 4-inch electric recording and integrating water meter was purchased and will be installed on one of the bathhouse supply lines for experimental purposes, with the idea of installing them later on all lines and metering the water supplied to all bathhouses. A hot-water shortage was averted this year by the exercise of strictest economy and by redistribution of water in reservoirs.

*Public camp grounds.*—The 16 acres of land, when taken over, were densely covered with underbrush, and there were several marshy places. The underbrush was cleared away; low places were filled in; ditches were cut and tile laid to drain wet places. A comfort station for men and women, with pressure flush toilets, was erected. To supply water, a 100-foot artesian well was drilled, having a flow of nearly 30,000 gallons per day. A 3,000-gallon storage tank and a pump house were built at the well and pipe lines and galvanized storage tank installed. A complete electric lighting system was built, current being supplied by the local electric company. A road was built to open up parts of the grounds for camp sites. Two concrete bridges with wood superstructures and three concrete culverts were built to bridge streams. The swimming pool was deepened and cleaned out, and the dam was repaired. The dressing rooms were remodeled.

*Sanitary sewer.*—Contract was let for installing approximately 2,000 feet of 14-inch cast-iron sanitary sewer, extending from the north end of Bath House Row to a point about 600 feet south of the reservation line, from which point it will be cared for by the city. This sewer line will be built within the arched conduit of Hot Springs Creek and will replace the old 10-inch tile sewer. A 4 by 5 foot reinforced concrete storm sewer was built from the property line on Canyon Street down to Central Avenue from which point the city continued it into the creek conduit. The section built by the park was approximately 400 feet long.

*Miscellaneous.*—Nearly all park benches were repaired and painted. The rolling equipment was kept in repair, the old equipment at considerable expense.

An unusually violent hailstorm visited the city on December 7, 1924, the damage to the park amounting to \$400 or more. The lights and balls of the White-way were broken, the glass roof of the greenhouse was demolished, and shrubbery and trees suffered considerable damage.

#### GOVERNMENT FREE BATHHOUSE AND CLINIC

The average number of persons bathed daily in the Government free bathhouse was 241, with a total of 73,841 baths given during the year. The total number of persons bathing was 3,441.

The total number of patients examined and treated in the free clinic was 3,411. Of this number 2,787 were venereal-disease cases. The total number of examinations, treatments, etc., given in the clinic during the year was 65,313.

The course of instruction for physicians was continued in the clinic, several physicians taking the course during the year.

While a smaller number of patients has been treated in the bathhouse and clinic, more intensive courses of treatment have been given those under treatment.

#### PAY BATHHOUSES

One new bathhouse, the Arlington, was completed this year, opening on December 20, 1924. On October 15, 1924, the lease of the Rector Bathhouse expired, and it was closed.



The following tables show the business of the pay bathhouses for the fiscal year:

Bathhouse	Net amount received by attendants	Paid for redeemed tickets	Total bath receipts less remptions	Receipts from massage, etc.	Total receipts	Total expenditures	Net profits
Alhambra	\$5,209.60	\$1,594.05	\$13,172.40	\$51.35	\$13,223.75	\$10,184.30	\$3,039.45
Arlington	8,768.46	5,600.12	37,378.58	1,767.00	39,145.58	12,645.85	26,499.73
Buckstaff	9,918.80	4,346.27	34,891.73	2,938.80	37,830.53	31,509.95	6,320.58
Eastman	5,787.07	3,143.31	20,449.44	1,217.00	21,666.44	18,067.00	3,599.44
Fordyce	7,350.37	3,425.00	27,723.95	4,837.48	32,561.43	25,468.95	7,092.48
Hale	7,435.40	772.20	22,333.40	432.00	22,765.40	16,617.83	6,147.57
Imperial	6,415.00	2,343.60	19,190.10	639.30	19,829.40	19,562.84	266.56
Lamar	10,673.76	6,198.07	34,631.13	4,256.52	38,887.65	27,439.95	11,447.70
Majestic	6,851.76	3,383.94	22,369.56	500.00	22,869.56	14,144.32	8,725.24
Maurice	10,867.00	5,184.65	37,996.60	4,070.30	42,066.90	33,827.25	8,239.65
Moody	3,198.88	1,511.02	9,674.73	273.25	9,947.98	7,640.10	2,307.88
Ozark	10,358.98	4,017.63	31,301.77	1,342.49	32,644.26	19,788.87	12,855.39
Ozark Sanatorium	2,658.81	1,156.95	7,720.00	66.35	7,786.35	6,810.17	976.18
Pythian (colored)	4,017.48	502.42	7,924.83	235.25	8,160.08	10,528.59	1,236.51
Quapaw	8,365.60	3,127.66	27,505.69	1,446.69	28,952.38	25,311.84	3,640.54
Rector (closed Oct. 15, 1924)	566.60	526.65	1,488.60		1,488.60	1,753.72	1,265.12
Rockafellow	6,318.20	2,002.05	17,897.55	929.50	18,827.05	14,372.85	4,454.20
Superior	7,572.04	4,265.06	22,789.39		22,789.39	19,677.69	3,111.70
St. Joseph's Infirmary	1,227.90	778.99	3,675.76		3,675.76	4,919.59	1,243.83
Woodmen of Union (colored)	1,759.81	203.68	3,282.82		3,282.82	2,992.00	290.82
Total	125,326.52	54,083.32	403,398.03	25,003.28	428,401.31	323,263.66	109,015.11 13,877.46

<sup>1</sup> Deficit.

Bathhouse	Total baths sold	Baths re-deemed	Net paid baths sold	Paid baths given	Complimentary baths	Total baths given
Alhambra	30,434	3,351	27,083	26,779	21	26,800
Arlington	51,361	6,535	44,826	45,670	12	45,682
Buckstaff	57,692	6,208	51,484	51,997	384	52,381
Eastman	34,258	4,718	29,540	30,306	334	30,640
Fordyce	39,908	4,281	35,627	35,491	321	35,812
Hale	39,809	1,287	38,522	39,616		39,616
Imperial	36,929	3,906	33,023	33,455	262	33,717
Lamar	64,966	9,997	54,969	55,775	732	56,507
Majestic	40,768	5,396	35,372	35,219	121	35,340
Maurice	63,718	7,407	56,311	55,278	220	55,498
Moody	19,126	2,626	16,500	16,405	157	16,562
Ozark	60,574	6,696	53,878	51,828	219	52,047
Ozark Sanatorium	16,616	2,218	14,398	14,085		14,085
Pythian (colored)	21,892	1,153	20,739	20,656		20,656
Quapaw	48,269	5,030	43,239	42,447	103	42,550
Rector	3,790	957	2,833	2,833	66	2,899
Rockafellow	37,293	3,641	33,652	34,230		34,230
Superior	46,723	7,469	39,254	39,418	31	39,449
St. Joseph's Infirmary	7,663	1,312	6,351	6,394		6,394
Woodman of Union (colored)	9,183	489	8,694	9,358		9,358
Total	730,972	84,677	646,295	647,240	2,983	650,223

### Hot water and ground leases

Name of bathhouse, etc.	Lessee	Tubs	Date of lease	Expiration
Alhambra	Alhambra Bathhouse Co.	18	Mar. 1, 1925	Feb. 29, 1928
Arlington	Arlington Hotel Co.	92	Jan. 1, 1925	Dec. 31, 1944
Buckstaff	Buckstaff Bath <sup>1</sup> House Co.	30	Jan. 1, 1912	Dec. 31, 1931
Eastman	New York Hotel Co.	89	May 13, 1912	May 12, 1932
Fordyce	S. W. Fordyce, Jr., trustee	30	Jan. 1, 1915	Dec. 31, 1934
Hale	Union & Mercantile Trust Co., trustee	25	do	Do.
Imperial	Charles N. Rix	27	Jan. 1, 1912	Dec. 31, 1931

<sup>1</sup> Water used in private rooms in portion of tubs leased.

*Hot water and ground leases—Continued*

Name of bathhouse, etc.	Lessee	Tubs	Date of lease	Expiration
Lamar <sup>2</sup> .....	Lamar Bath House Co.....	26		
Levi Memorial.....	Leo N. Levi Memorial Association.....	5	Nov. 1, 1924	Oct. 31, 1934
Majestic.....	Avenue Hotel Co.....	23	Jan. 1, 1913	Dec. 31, 1932
Maurice.....	Maurice Bath Co.....	29	Jan. 1, 1912	Dec. 31, 1931
Moody.....	New Moody Hotel Co.....	16	July 1, 1920	June 30, 1930
Ozark.....	Ozark Bath House Co.....	26	July 1, 1922	June 30, 1942
Ozark Sanatorium.....	Ozark Sanatorium Co.....	10	Sept. 17, 1922	Sept. 17, 1932
Pythian (colored).....	Pythian Bath House & Sanatorium Comm.	16	Dec. 16, 1924	Dec. 15, 1944
Quapaw.....	Quapaw Bath House Co.....	40	Feb. 1, 1922	Jan. 31, 1942
Rockafellow.....	Mahala J. Rockafellow.....	18	July 1, 1920	June 30, 1930
St. Joseph's Infirmary.....	Sister Superior.....	10	Feb. 1, 1924	Jan. 31, 1934
Superior.....	Superior Bath House Co.....	20	Feb. 15, 1916	Feb. 14, 1936
Woodmen of Union (colored).....	Supreme Lodge, Woodmen of Union.....	11	Mar. 1, 1922	Feb. 28, 1942
Arlington Hotel, ground lease.....	Arlington Hotel Co.....		Mar. 21, 1914	Mar. 3, 1932
Hot Springs Mountain Observatory, ground lease. <sup>2</sup>	Hot Springs Mountain Observatory Co.			

<sup>2</sup> Tenants holding over.

## SANITATION AND PUBLIC HEALTH MATTERS

Regular and irregular inspections are made in all the bathhouses. At least five regular inspections are made in the men's department and two in the women's department of the bathhouses each month. Very satisfactory conditions are usually found, it being to the bathhouses' interest to be in good condition, from a standpoint of sanitation and cleanliness.

On the first of each month all bathhouse employees coming in personal contact with bathers are given a physical examination, and conditions found are noted on the employees' health cards. New employees are given complete examinations, including the Wasserman test, before being permitted to work in the bathhouses.

Bacteriological examinations of the water have been made at intervals, but no contamination has been disclosed.

Mosquito control work has been carried on in all parts of the park where they might have a tendency to breed. Particular care was taken to keep the public camp site free from mosquitoes.

Regular examinations have been held at intervals of three months for applicants for the position of masseur and masseuse in the bathhouses. Mental, written and oral, and practical examinations are given, in addition to complete physical examinations.

## VISITORS

The records for the travel season show that about 265,500 persons visited the park this year. A paved highway connecting Little Rock and Hot Springs was completed in June. This has brought about an enormous increase in the number of automobile tourists visiting this park. Official figures are not available, but the chamber of commerce estimates that about 130,000 automobile tourists came here. Since December 1, 6,900 visitors have used the public camp grounds.

## YELLOWSTONE NATIONAL PARK

HORACE M. ALBRIGHT, Superintendent, Yellowstone Park, Wyo.

The opening ceremonies of the 1925 season were held on June 18 at the western gateway. Cooperating with the National Park Service in preparing for these ceremonies and in conducting them was the Union Pacific System. Numerous publicity men, photographers, etc., were invited to the ceremonies by the railroad. Indians from the Fort Hall Reservation were also brought in. Four governors were present: Gov. Nellie Tayloe Ross, of Wyoming; Gov. J. E. Erickson, of Montana; Gov. C. C. Moore, of Idaho; and Gov. George H. Dern, of Utah. All of the governors spoke of the great beauty and interest of Yellowstone and its importance, both from the economic and recreational standpoints, to the adjoining States. Just before leaving, the governors



adopted a resolution pledging their support in keeping Yellowstone National Park intact from any encroachment by private interests or from commercial exploitation.

#### WEATHER

The weather for the fall months was unusual in that it was persistently cool and snowfall in material depths occurred unprecedentedly early in the season. The outstanding feature of the year's weather was the record-breaking prolonged period of severely cold weather which extended from December 15 to 27. This cold period far surpassed any previous period of record for severity and duration of low temperature, establishing for the park a new absolute minimum temperature record of 59° below zero, which occurred at Riverside on the 19th, while 58° occurred the same day at Buffalo Ranch. Extremely mild weather with deficient snowfall characterized the remainder of the winter. The snow on the ground disappeared about 10 days earlier in the spring than usual. April, May, and June were months of plentiful moisture, resulting in a luxuriant growth of grass and wild flowers throughout the park.

#### TRAVEL

Park visitors this year totaled 154,282 as compared with 144,158 last year, an increase of 10,124. The rail travel figures were 44,786 as compared with 41,054 last year, showing an increase of 3,732 over the preceding season.

There was a decrease of 122 rail visitors at the west entrance; the north entrance shows an increase of 3,568 and the east entrance an increase of 268 as compared with the preceding season. Two hundred and twenty-five came in via the Lander or southern gateway as compared with 207 last year.

The automobile travel records, for preceding seasons, at the east and west gates have been exceeded this year. A total of 38,109 persons entered at the east gate and 32,713 at the west. A total of 26,593 auto visitors entered at the north gate and 8,914 at the south.

The number of cars and people reported at the various developed camp grounds during the season are indicated as follows: Mammoth, 19,154 cars and 63,859 campers; Old Faithful, 26,989 cars and 89,991 campers; Lake, 21,455 cars and 71,531 campers; Canyon, 17,954 cars and 59,859 campers; Norris, 1,544 cars and 5,148 campers; Madison Junction, 2,785 cars and 9,285 campers; Thumb, 2,806 cars and 9,355 campers; Tower Falls, 3,534 cars and 11,782 campers. In addition, approximately 9,500 campers used the many camping places along the roads.

The west entrance continues to lead in the rail travel and the east entrance is the favorite gate for motorists.

There was an increase of 6,143 auto visitors over the total of last year.

#### *Total season travel by entrances, 1925 and 1924*

Gateway	Rail visi- tors	By automobile		By motor cycle		By walk- ing, horse- back, etc., visi- tors	Pre- season visi- tors	Total visi- tors
		Cars	Visitors	Motor cycles	Visi- tors			
1925								
North.....	17, 007	8, 796	26, 593	42	64	394	1, 471	45, 529
West.....	20, 287	9, 815	32, 713	34	42	86	173	53, 301
East.....	7, 267	11, 686	38, 109	40	58	275	66	45, 775
South.....	225	2, 771	8, 914	10	16	499	23	9, 677
Total.....	44, 786	33, 068	106, 329	126	180	1, 254	1, 733	154, 282
1924								
North.....	13, 439	8, 199	26, 553	48	68	475		40, 535
West.....	20, 409	9, 353	31, 580	38	42	96		52, 127
East.....	6, 999	9, 930	32, 285	59	90	313		39, 687
South.....	207	2, 871	9, 768	20	25	685		10, 685
Preseason visitors (north and west).....							1, 124	1, 124
Total.....	41, 054	30, 689	100, 186	165	225	1, 569	1, 124	144, 158



## REVENUES FOR 1925

Funds collected during the fiscal year 1925 and deposited to the credit of miscellaneous receipts in the United States Treasury were as follows:

Automobiles and motor cycles-----	\$216, 597. 06
Hotels and camps-----	45, 657. 09
Transportation-----	43, 786. 84
Stores-----	13, 194. 95
Miscellaneous-----	6, 887. 01
Total-----	326, 123. 01

Revenues for the 1926 fiscal year will amount to approximately \$335,000.

## ADMINISTRATIVE DEPARTMENT

*Headquarters office.*—During the fiscal year from four to eight clerks were employed in the headquarters office on general correspondence, files, personnel, purchasing, time-keeping, miscellaneous financial matters, information, and a wide range of other duties relating to this and to other parks.

*Appropriations.*—Appropriations made available since the date of the last report are as follows:

Act	Purpose	Amount
Dec. 5, 1924-----	Road and trail construction-----	\$30, 000
Do-----	Increase of compensation-----	24, 103
Jan. 20, 1925-----	Insect control-----	5, 000
Mar. 3, 1925-----	Administration, protection, and maintenance-----	364, 503
Do-----	Construction, sewers and camp grounds, etc-----	20, 297
Do-----	Road and trail construction-----	100, 000
Total-----	-----	543, 903

## ENGINEERING DEPARTMENT

This department is in charge of Engineer A. W. Burney, aided by Assistant Engineer W. I. Davis.

*Road maintenance.*—The park road system consists of 298 miles of road designated as follows: Grand Loop 137.4 miles, approach and connecting roads 79.1 miles, secondary and roads to points of interest, 81.5 miles. During the 1925 season 291.8 miles of roads were maintained in the park, also 28 miles of road in the Shoshone Forest on the east side of the park, and 30 miles in the Teton Forest on the south side. During the tourist season 107 miles of the Grand Loop Road were sprinkled twice daily.

*Snow removal.*—Unusually heavy snowfall in the south and east sections of the park, followed by a cold backward spring, made the work of opening the park roads to travel more difficult than usual. On June 1 a crew began blasting in Sylvan Pass and on the 12th another crew began at Cub Creek, opening the east entrance road on June 19. The Dunraven Pass Road was opened June 18 after a crew had worked 13 days blasting and shoveling. The Continental Divide Road was opened June 16, the south entrance road June 22 and the Mount Washburn Road July 1.

*Road improvement.*—The first three-year program of improvements to roads in Yellowstone Park consists of 13 projects of which the following-named five will be completed, or partially completed this season:

*Project No. 13, Lake Shore Road.*—Reconstruction of the old road 11 miles in length along the shore of Lake Yellowstone between West Thumb and Bridge Bay, to replace the present steep, narrow, and uninteresting section.

*Project No. 6, Firehole River Road.*—Widening for two-way travel a section 1½ miles in length along the Firehole River, south from Firehole Cascades.

*Project No. 7, West Thumb-Arnica Creek Road.*—Widening the present road for three-quarters of a mile over Bluff Point, a promontory 2 miles from West Thumb on the Lake Road.

*Project No. 9, Mammoth-Tower Falls Road.*—Widening  $1\frac{1}{8}$  miles and surfacing 3 miles between the 2 and 5 mile posts from Mammoth.

*Project No. 11, Inspiration Point Road.*—Reconstruction of  $2\frac{1}{2}$  miles of road along the north rim of the Grand Canyon.

*Bridges.*—Twenty-three steel bridges, having a combined length of 2,200 feet, were painted this year.

*Crawfish Creek Bridge.*—A 54-foot steel bridge was constructed over Crawfish Creek on the south entrance road, replacing an old log bridge that had become dangerous. The new bridge is one that was removed from a location on the Gardiner River in 1919. It is a 15-degree skew bridge and crosses the creek at that angle, permitting the road to be straightened at the crossing. The bridge was placed on concrete abutments.

*Buildings.*—A new ranger station was erected at Thumb of Lake near the site of the old Thumb Station. It is a three-room log structure. A two-room log snowshoe cabin was also constructed at the mouth of Blacktail Deer Creek.

A log bunkhouse 16 by 24 feet and a log stable 16 by 30 feet were built at Cub Creek for the use of the road crew at that place.

#### LANDSCAPE ENGINEERING ACTIVITIES

Chief Landscape Engineer D. R. Hull visited the park in June and gave advice and information on many matters affecting the National Park Service and the properties of the public utilities and individual operators.

He designed for the National Park Service a spring effect for Appolinaris Spring, in collaboration with Mr. H. B. Hommon, sanitary engineer of the United States Public Health Service. Mr. Hull also located sites for new comfort stations and other auto camp structures.

Clean up of the roadsides between Mammoth Hot Springs and Obsidian Creek, a total of  $10\frac{1}{2}$  miles, was accomplished during the fall of 1924 and spring of 1925 with private funds.

#### SANITATION DEPARTMENT

This department, in charge of Master Plumber William Wiggins, cooperated closely with the engineering department in construction work, and was assisted constantly by the United States Public Health Service officers on duty here.

1. *Public auto camp development.*—Mammoth.—Installed 8 showers, 4 for men and 4 for women, and put in hot and cold water and 2 wash basins. Built 90 tables.

Tower Falls.—Installed 400 feet 6-inch sewer pipe. Dug cesspool and built 48 tables.

Lake.—Enlarged water main—2,000 feet 4-inch galvanized-iron water pipe, 1,000 feet 3-inch pipe, 600 feet  $2\frac{1}{2}$ -inch pipe, 3,000 feet  $1\frac{1}{2}$ -inch pipe. Built 1 comfort station; installed 8 flush toilets, 2 wash basins, 1 urinal, and 13 drinking faucets, and built 57 tables.

Fishing Bridge.—Enlarged water main—4,000 feet 4-inch galvanized-iron water pipe, 800 feet 3-inch water pipe, 1,000 feet 2-inch water pipe. Built 2 comfort stations; installed 16 flush toilets, 2 urinals, 4 wash basins, and built 100 tables.

Thumb.—Enlarged water main—4,200 feet 4-inch galvanized-iron water pipe, 1,000 feet 2-inch water pipe, 100 feet 1-inch water pipe, 80 feet  $\frac{3}{4}$ -inch water pipe, and 1,200 feet 6-inch sewer pipe. Built 2 comfort stations; installed 16 flush toilets, 2 urinals, 4 wash basins, and built 50 tables. Built 50,000-gallon reservoir and pump house and installed a 40-horsepower Buda motor to operate a Worthington Duplex plunger pump which lifts water 120 feet elevation from Duck Lake. Capacity of pump 20,000 gallons per hour.

2. *Mosquito control.*—Many mosquitos throughout the park due to exceptionally wet season. Extensive ditching and oiling at the Canyon, Lake, Tower Falls, West Thumb, Upper Basin, and Mammoth.

3. *Garbage and refuse disposal.*—All dump grounds practically cleaned up. Tins and glass buried. Garbage not eaten by bears, and paper, trash, and wood burned. Special bear-feeding platform constructed at each dump ground. Data collected at Upper Basin, Lake, and Canyon for incinerators and tin-can crushers.

4. *Miscellaneous.*—Operated six septic tanks with chlorinators and one without. Supervised operation of two swimming pools. Made special water supply



investigations for Upper Basin, West Yellowstone, and Norris. Prepared plans for sewerage systems at Thumb and Camp Roosevelt and for the transportation company at Gardiner. Inspected creameries and dairies supplying the park.

#### PROTECTION DEPARTMENT

The permanent personnel of this department consists of the chief ranger, S. T. Woodring, 3 assistant chief rangers, and 27 park rangers; 52 temporary park rangers were added to the force on June 16, making a total summer strength of 83.

*Winter activities.*—Regular and special patrols were made throughout the fall, winter, and spring seasons for the observation and protection of wild life and the natural features of the park, wild animal feeding, predatory animal hunting, and repairs and maintenance to buildings and equipment.

*Summer activities.*—Fire, fish, and traffic patrols; information, guide, and lecture service; travel statistics; checking travel at entrance and exit stations and at public auto camps; police duties; and a wide range of other duties too numerous to mention here.

*Forest fires.*—No forest fires of consequence occurred during the year.

*Trail construction, maintenance, and improvement.*—Twelve miles of new trail have been built, consisting of 2 miles of saddle-horse trail from Old Faithful to Mystic Falls, 4 miles of foot trail paralleling the loop road through Black Sand Basin, Fox Creek to Mariposa Lake, 3 miles, and about 4 miles in the Tower Falls district, including a footbridge near Tower Creek. The Tower Falls job was accomplished by a small band of Eagle Scouts under the leadership of Mr. E. G. Maclay, of Great Falls, Mont. The total trail mileage, exclusive of game trails used on patrol, is 854. The entire trail system was cleared of down timber and repaired.

*Fish planting.*—Fish planting activities this year, with comparative figures for 1923 and 1924, are reported as follows:

	1923	1924	1925
Total collection of black-spotted trout eggs from park waters.....	31, 570, 000	32, 000, 000	11, 748, 000
Number of eggs collected in park, hatched, and returned to park waters or planted as eyed eggs.....	12, 795, 000	18, 544, 000	4, 336, 760
<i>Total number of fish planted in park</i>			
Black-spotted trout collected in park.....	12, 795, 000	18, 544, 000	4, 336, 760
Eastern brook trout received from Montana State Hatchery.....	100, 000	49, 400	-----
Rainbow trout received from Montana State Hatchery.....	100, 000	-----	80, 000
Lock Leven trout received from Montana State Hatchery.....	-----	41, 800	-----
Total fish plants for year.....	12, 995, 000	18, 635, 200	4, 416, 760
Total fish shipments to outside points.....	-----	-----	6, 726, 000

#### BUFFALO RANCH OPERATIONS

The activities at the buffalo ranch have consisted of the care of the herd, hay harvesting, repairs and alterations to stables, fences and corrals, maintenance work on roads and telephone lines, and other routine duties. The success of "Buffalo Plains Week" which had its inception on August 30 this year was largely due to the efficient work of the chief buffalo keeper and his assistants. Twenty-five acres were plowed, cultivated and seeded to oats, timothy, and red top. A total of 350 tons of hay was fed during the fiscal year ending June 30. The yield for the season of 1925 was 1,020.86 tons.

#### HAY RANCH OPERATIONS

Wild animal and horse feeding at the various hay ranches during the winter and spring seasons accounted for approximately 662 tons of hay, and of this amount 52 tons were fed at Yancey's, 346 tons at Slough Creek, and 264 tons at Gardiner. This year's tonnage can not be accurately stated at this time for the reason that much of it has been recently stacked. The approximate yield, however, is 1,366.58 tons.



## PREDATORY ANIMALS

One hundred and eighty coyotes and one mountain lion were killed during the year.

## NATURAL FEATURES OF THE PARK

Observations of wild life, geysers and hot springs activities, and forests, have been made by the park naturalist and by rangers and are briefly reported as follows:

*Wild animal conditions.*—Wild animal conditions have been generally good throughout the year; forage conditions are excellent.

*Buffalo, Lamar River Herd.*—In January, 1924, herd total was 633; the calf crop of 1924 was 120, making a herd total of 753 at the beginning of the fall season of 1924. This figure corrects an error of 27 in the reported herd total of last year which was occasioned by including a band of this number which should have been included in the count of the Cold Creek-Pelican Flats herd.

The losses during the year were as follows: Shipments 86, accidental 5, winter kills 1, killed by authority of the director 17, total 109, leaving a herd total of 644 at the beginning of the calving season this year. This total consisted of 323 males and 321 females—the males consist of 162 bulls and 161 steers. Twenty calves of the 1924 crop were castrated. The calf crop of 1925 totals 120. Buffalo feeding was begun on December 28 and concluded on April 4.

*Buffalo—Cold-Creek Pelican Flats herd.*—The total count during the year was 66; this is the largest actual count in recent years. The estimated herd total is 125.

*Mountain sheep.*—Actual counts during the winter and spring seasons total 195. The estimated total for the park area is 600. The reported losses occasioned by hunters at points adjacent to the park amounted to 6.

*Antelope.*—Antelope conditions are excellent; the herd has wintered remarkably well. There was a loss of 4 during the year, consisting of 2 winter kills and 2 coyote kills. The herd total of late April was 417. There is every indication of a normal increase this year.

*Moose.*—The moose counts submitted during the course of the winter season total 170, as compared with 121 last year; they are widely distributed. There is an estimated total of 525 in the park.

*Deer.*—Numerous counts have been submitted by rangers on patrol; the total of these counts is 602. This is believed to be about one third of the total number of mule deer within the park and at points along the Yellowstone and Gallatin Rivers adjacent thereto. The reported losses occasioned by hunters beyond the park boundaries amounted to 56. Other losses consisting of winter kills, coyote kills and accidents, total 35. The total of all reported losses is 91. There is believed to be not less than 1,800 mule deer in the park region. White tail deer are extremely rare. There are probably not more than 12 in the entire park.

*Elk.*—The elk are in excellent condition and there is abundant forage for the approaching winter season. Winter kills during the year did not exceed 2 per cent of the herd total. The actual count was 347. Twelve hundred and eighty-eight were reported slain by hunters at points adjacent to the park. The losses from all causes were 1,703. Careful counts of the herds were made late in April and the total of these counts was 17,242. The calf crop this year is unusually large and the estimated herd total at this time is 20,000.

As to the Jackson Hole elk, the Forest Service and Biological Survey officials in the spring of 1925 estimated the herd at 19,000, not considering this year's calf crop. Five hundred and fifty tons of hay were fed last winter to this elk herd but only 1,700 elk used the feed grounds. There will be more than 3,000 tons of Federal and State hay available for feeding during the winter of 1925-26. The Izaak Walton League has purchased 1,760 acres of hay and pasture land near the Biological Survey ranch. The combined ranch areas total about 4,500 acres, of which 1,000 acres produce hay. The hay from the Izaak Walton League ranch has been harvested by the Biological Survey and is included in the total of 3,000 tons.

*Black bears.*—Black and brown bear are commonly seen throughout the park. Mothers with cubs numbering from one to three frequent all the main highways and the feed grounds at the various hotels and camps. The total number of black bear in the park is believed to be about 200.

*Grizzly bears.*—Twenty-seven grizzlies were observed at the Canyon Hotel feed ground on July 18. Five have been frequenting the feed ground at Old Faithful and 7 were commonly seen at Lake. A total of 15 grizzly cubs have been reported. There is believed to be not less than 75 bear of this species in the park.

*Beaver.*—Unusual beaver activities have been reported at all points suited to their requirements. There appears to be a normal annual increase.

*Other small animals.*—Marten, mink, skunk, weasel, otter, and fox were frequently seen throughout the winter season. Woodchucks, porcupines, badgers, etc., are numerous at all points.

*Trees.*—The sawfly, so abundant last year near west Yellowstone, has nearly disappeared. The needle-tyer remains about the same as last year. The spraying of 1924 was effective along the road in the west Yellowstone region. This year spraying was renewed, a strip 7 miles in length and 300 feet in width along the road being covered. In general it may be said the insect infestation is disappearing.

*Insects.*—Professor Comstock visited the park to make a systematic collection of butterflies. He gratefully acknowledged to the park naturalist the cooperation we afforded him in his work and promised to give our museum a series of mounted specimens—a duplicate of his own Yellowstone Park collection—the specimens mounted, ready for display. The offer was thankfully accepted as a very valuable contribution to our museum.

#### GEYSERS AND HOT SPRINGS

*Mammoth Hot Springs.*—Jupiter Terrace shows a normal flow of water, but fewer basins filled than usual. Mount Terrace was very active at all points. The new terrace behind Mound retained its attractive coloration of last year and built up rapidly. Angel Terrace showed a slight increase of activity, yet is nearly dead. The new Highland Terrace, which became active early in the spring of 1925, was one of the most beautiful features of the Mammoth Springs area. The flow of the "White Elephant" gradually moved southward along the fissure line. Narrow Gauge is practically extinct. A new spring beside the roadway near Hymen Terrace showed considerable activity in May and June, but has since ceased to flow.

*Norris Geyser Basin.*—The Constant last played on the 13th of July. Mud also played on the 13th of July. Valentine played about twice each week. Two new geysers have been noted about 20 yards northeast of Constant. Their periods of activity have been, respectively, about 14 and 9 hours.

*Lower Geyser Basin.*—A cloud of steam has been seen to rise from National Park Mountain about every 20 minutes following rain; less often various other steaming places have been noted. An interesting hot-water region in the Fire-hole Canyon will be made available to tourists by the completion of the new road planned for 1926. The first eruption of Fountain Geyser observed in two years occurred on July 4.

*Upper Geyser Basin.*—Conditions have been about as usual since June 21, when a new vent was first observed in the Giant Geyser.

*West Thumb.*—Unusual conditions were observed about 7 a. m. June 21. The roadside pools filled rapidly; geyser action increased. In one large pool, previously inactive, the water rose 5 to 20 feet. The periods were frequent for two days. Small geysers formed in some large pools.

#### INFORMATION DEPARTMENT

A total of 42,968 people visited the information office at headquarters during the season, 2,906 in June, 25,175 in July, 12,725 in August, and 2,162 in September; compare the total with 30,677 during the season of 1924 and 33,822 during the season of 1923. A total of 91,070 free publications were distributed at the information office and ranger stations in the park and 8,089 Government publications, including 2,291 portfolios, were sold. Compare this total sale with 5,501 Government publications, including 874 portfolios, disposed of last year. In addition 1,187 books of other publishers were sold.

*Lecture service.*—This service at Mammoth Hot Springs consisted of three lectures each evening before audiences totaling approximately 72,160. Lectures were similarly conducted at Old Faithful and Tower Falls, and were attended by approximately 40,282 persons at Old Faithful and 1,194 at Tower Falls, as compared with 68,000 at Mammoth and 36,000 at Old Faithful last year.



*Guide service.*—Two regular guide parties were conducted twice daily over the formations at Mammoth Hot Springs and Old Faithful. Special guide service was also furnished at these points upon request. The season total of the guide parties at Mammoth Hot Springs was 14,856; 31,892 comprised the season total at Old Faithful and 1,108 at Tower Falls, as compared with 11,108 at Mammoth, 27,701 at Old Faithful, and 1,883 at Tower Falls last year.

#### ELECTRICAL DEPARTMENT

*Electric system.*—The following table shows the total production of the power plant and disposition of current as compared with similar data for the fiscal year 1924.

The peak load for the year was 164 kilowatts, as compared with 124 kilowatts last year.

	1923-24	1924-25
Total production in kilowatt-hours.....	451, 022	600, 680
Sold to park utilities.....	85, 703	100, 126. 67
Consumed for street lighting.....	23, 786	21, 086
Balance, consumed by Government buildings, for power and lighting, lost on lines, etc.....	351, 533	479, 467. 33

On account of the increased load it has become necessary to run two machines continually during the park season.

*Telephone system.*—A new telephone line between Norris Junction and Lake Hotel was constructed by the Yellowstone Park Hotel Co. and National Park Service. Twenty-five-foot cedar poles and four pin fir crossarms were used. Between Norris Junction and Canyon Junction eight wires were placed which provides two metallic circuits and one phantom circuit for the hotel company and the same for the National Park Service. Between Canyon Junction and Lake Hotel four wires were placed, making two metallic circuits and one phantom circuit. The new line was located out of sight in the timber wherever possible. The completion of the new line permitted the dismantling of the two old, unsightly lines that have been eyesores on the landscape for many years.

#### PAINTING DEPARTMENT

The master painter and his assistants painted Sylvan Pass Ranger Station, and Upper Basin mess house was creosoted. Approximately 1,000 signs were made, painted, repaired, and touched up. Thirty-four trucks and motor sprinklers, 2 passenger cars, 22 road graders, 60 dump wagons, 10 horse-drawn sprinkler wagons, and 4 spring wagons were painted, lettered, and numbered. Three wards in the hospital, including furniture, and several sets of quarters were painted and redecorated. Twelve roofs were painted at Mammoth; also fire equipment and fire hydrants.

#### MECHANICAL DEPARTMENT

The mechanical department made repairs to all trucks in use; overhauled 34 trucks, 4 touring cars, 1 caterpillar, 1 steam shovel, and 1 compressor, and made 6 new freight bodies for F. W. D. trucks. The blacksmith overhauled 62 dump wagons, 16 road graders, repaired small equipment of all kinds, and did horseshoeing. The shop crew built 35 camp toilets and 230 camp tables.

#### PROPERTY AND TRANSPORTATION

Under the direction of the steward and master of transportation, 2,752 tons of material, equipment, and supplies were moved from railroad terminals to headquarters. From headquarters 11 trucks were operated through the park supplying road camps, construction camps, etc. The total mileage of the trucks was approximately 60,000. A maximum of 16 men were engaged in the warehouse and in the transportation work (61,558.94 ton-miles hauled).



## IMPROVEMENTS BY PUBLIC UTILITIES AND INDIVIDUAL OPERATORS

*Yellowstone Park Camps Co.*—Mammoth.—Reconstructed 130 permanent lodges with new window frames, new door casings, and replaced all old canvas with new boards; painted above lodges, also six other buildings in the camp; erected one new flush toilet building and equipment; planted new lawn in front of main building with grass, trees, and shrubbery; extended water lines to remote parts of camp; enlarged stage in recreation hall.

Old Faithful Camp.—Constructed new delicatessen and lunch counter building in the public automobile camp; installed 25 one and two room tent lodges in automobile camp; constructed 25 one and two room, all board and pole lodges in Old Faithful Camp; built pergola between the lobby and main dining room; erected a pole and canvas awning over loading platform; extended water lines in parts of camp not heretofore supplied.

Lake Camp.—Reconstructed 30 tent cottages into permanent pole and frame lodges; installed more windows in all dormitories; made addition to old kitchen; erected pole and canvas awning over loading platform. Commenced construction of a new log and frame building, 60 by 164 feet.

Canyon Camp.—Constructed a large lobby 55 feet wide by 175 feet long, with extensions to this building of a space about 30 feet wide and 55 feet long for a curio store; also an addition to the new building, 30 by 45 feet, for use as a writing room. Constructed a building 30 by 90 feet used as a service building, housing rooms for men and women's flush toilets, barber shop, dispensary, general work office, storage rooms, etc. Extension to dining room about 40 by 60 feet; boiler capacity doubled; 12 new one and two room permanent lodges of frame and pole were constructed; lunch counter was added to delicatessen; 24 one and two room canvas and frame tents were installed near Canyon public automobile camp.

Camp Roosevelt.—Work at this camp was in the nature of improvements to lodges built in past years.

Sylvan Pass Lodge.—Constructed large sewerage system; constructed one outside men's flush toilet building fully equipped and connected with main sewerage system; rebuilt old bridge across Shoshone River; constructed a barn 16 feet wide by 30 feet long; considerable riprap work was done in the river to save water from washing into camp grounds; installed cable across the river to carry pipe line.

*Yellowstone Park Hotel Co.*—Mammoth.—New passenger elevator installed; new 400-gallon per minute fire pump installed; new 220 line common battery switchboard; telephone cable from Mammoth Hotel to Mr. Child's and Mr. Nichol's residences, thereby eliminating telephone poles in the vicinity of Liberty Cap; all telephone wires back of Mammoth Hotel moved off of the hill; old wiring in basement replaced; 28 new radiators installed.

Old Faithful.—Four hundred-gallon per minute fire pump installed; entire bake shop remodeled; new cold storage box for meat and five other cold storage boxes intallsed; several new pieces of kitchen machinery installed; exhaust fan in kitchen installed; 25 radiators installed; the fire escapes extended to ground and additional fire escape built on rear of old wing; new carpenter and paint shop built; old plumbing shop moved from rear of hotel.

Lake.—Four hundred-gallon per minute fire pump installed; plumbing installed in barber shop and buffet; new 6-ton ice machine installed; 500,000-gallon concrete reservoir now being installed; new toilets, basins, and tubs for kitchen employees installed; new girls' dormitory completed last fall now in use.

Canyon.—Four hundred-gallon per minute fire pump installed; 40 radiators installed in girls' dormitory; entire exterior of hotel now being painted; a great deal of kalsomining and painting and fixing up old rooms has been done; plans being made to build a new men's dormitory at Canyon; additional fire escapes also installed.

Miscellaneous.—About \$1,000 worth of new fire-fighting equipment, such as fire extinguishers, has been distributed between the four hotels. Joint telephone lines, for hotel company and Government, built from Norris to Lake.

*Yellowstone Park Transportation Co.*—New storage garage at Gardiner finished last fall: new reinforced concrete machine shop, new boiler house, bunkhouse for employees, and two residences at Gardiner. Ninety new busses, 5 new 2-ton trucks, 1 new 5-ton truck, several Ford roadsters and trucks purchased. Repair shop and tire shop built at Mammoth to replace building destroyed by fire on March 30, 1925.

Old Faithful.—Old saddle horse sheds remodeled. New hay shed and granary built.

Canyon.—Extension to mess house.

Yellowstone Park Boat Co.—Ten new steel rowboats purchased.

J. E. Haynes, official photographer.—Grand Canyon.—Constructed and outfitted picture shop in building adjoining new lobby of Canyon Camp. Installed two large water filters for use in removing organic and inorganic impurities from water used in photo finishing plants—one at shop near Canyon Junction and other at Mammoth.

Henry P. Brothers.—Purchased and installed two bath tubs; also washing machine and extractor; laid 112 square feet concrete floor in laundry room.

George Whittaker, merchant.—Completed part of Canyon store started last fall—now used as a delicatessen. Improved grounds in front of Canyon store, hauling 60 loads of gravel for filling in. Store at public auto camp at Mammoth remodeled, using logs and panels for trimming. At Mammoth service station a new air pump was added. New fixtures were installed in Canyon and Mammoth stores.

C. A. Hamilton, merchant.—Enlarged Fishing Bridge store to double its former size, and put in Delco lighting plant. Built a 30-foot addition to Basin Auto Camp store. Completed knotted wood porch on Basin store. Installed latest model liquid carbonic fountain. Ten rowboats were purchased to be operated jointly with the boat company.

Pryor & Trischman.—Park Curio Shop.—Extension to shop 40 by 50 feet, making present store space 80 by 50 feet. Erected ice house and garage; enlarged kitchen and storerooms; added five bedrooms and bath for employees; repaired and painted old building and added office. Installed iceless soda fountain with 40-gallon capacity; new refrigerators; show cases; steam table and full equipment for serving meals.

Mammoth Auto Camp.—Constructed log store with two rooms and bath for employees. Installed range, steam table and full equipment for delicatessen and meals.

#### FRANCHISES AND PERMITS

On April 23, 1925, a supplemental agreement was entered with Pryor & Trischman to construct and operate, as an incidental privilege to their operations in the park, an ice cream and soft drink booth on the formation near Devil's Kitchen.

On December 20, 1925, a contract was entered into with Dr. George A. Windsor of Livingston, Mont., covering medical service in Yellowstone Park, to continue in force until terminated by one or the other of the parties in interest. On May 31, 1925, a contract was entered into with Dr. George A. Windsor covering medical service in Yellowstone during the winter months.

#### DEPARTMENT OF JUSTICE—UNITED STATES COMMISSIONER'S COURT

Hon. John W. Meldrum, commissioner since 1894, presiding. Proceedings were had in 34 cases during the year. There were 27 convictions and 6 acquittals, and 1 was bound over to the United States district court. A total of \$669.50 in fines, exclusive of costs, was imposed. There were 21 cases involving violations of traffic regulations, 1 case of drunken and disorderly conduct, 2 cases of indecent assault, 2 cases of trespassing and obnoxious conduct, 3 cases of defacing geyser formations, 1 case involving violation of the national motor vehicles act, and 4 cases involving the passing of fraudulent paper.

#### POST OFFICE DEPARTMENT

New equipment was purchased and the postoffice was moved to more commodious summer quarters this season. The business shows an increase over last year, nearly in proportion to the increase in travel, and cash receipts were much in excess of previous years, due to increase in rates on picture post cards. The business handled by the carrier has more than doubled.

#### DEPARTMENT OF THE INTERIOR

Geological Survey.—The park water gauging stations were inspected several times by hydrographic engineers of the United States Geological Survey, and



one of these engineers, Mr. Veatch, has just recently installed an automatic gauge and recording station on the Lamar River.

#### DEPARTMENT OF COMMERCE

*Bureau of Fisheries.*—Under District Supervisor C. F. Culler, a very efficient force of workers of this bureau undertook to carry on what gave promise of being the greatest egg take in the history of the park, but high water in the streams prevented spawning except in the lake, and after weeks of herculean effort a total of only 12,000,000 eggs was the result. Several new fish traps were installed in streams tributary to Lake Yellowstone, and a new collecting station was built at Clear Creek. Of these 4,336,760 were returned to park waters and 6,801,000 were shipped to points outside.

#### DEPARTMENT OF AGRICULTURE

*Weather Bureau.*—Observer E. H. Fletcher rendered his usual efficient service in the weather bureau here. He prepared many weather reports and statistical data for us.

*Bureau of Entomology.*—Under funds provided for the National Park Service for insect control, the Bureau of Entomology detailed Dr. H. E. Burke, one of its experts, to study forest insect infestations in Yellowstone Park. He supervised spraying operations to control the sawfly, surveyed the various areas of forest infested by insects, marked bark-beetle infested trees for cutting, and advised the superintendent on general forest conditions as affected by his work. Dr. F. C. Craighead, and Dr. J. C. Evenden of the bureau were here on inspection and to confer with Doctor Burke.

#### TREASURY DEPARTMENT

*Public Health Service.*—As usual the Public Health Service cooperated closely with the National Park Service in supervising the erection and maintenance of sanitation structures and systems and in the care of public health. Upon the discharge of Dr. J. M. Wolfe, Dr. N. A. Strickland was appointed acting assistant surgeon for the park. In early June Sanitary Engineer H. B. Hommon spent two weeks in the park and did some notable work. With the chief landscape engineer of the National Park Service he supervised the improvement of Apollinaris Spring, all sanitary features being designed by him. He also laid out other work to be done during the summer, and gave full instructions for work to be accomplished by Associate Sanitary Engineer I. W. Mendelsohn, who was in the park through the summer. Mr. Mendelsohn directed mosquito control measures, collected and shipped samples of drinking water in order that they might be analyzed, inspected the auto camps, garbage dumps, swimming pools, creameries, etc. The general sanitation in the park throughout the season was excellent.

#### HOSPITAL AND MEDICAL SERVICE

In the hospital, leased to Dr. George A. Windsor, of Livingston, Mont., splendid service was rendered. One section of the hospital was fully equipped for contagious cases. The following cases were cared for: 25 fractures; 6 contagious; 25 major operations; 147 sick; total 203. A total of 1,983 cases were treated in the hotel and permanent camp dispensaries.

Dr. J. Meek Wolfe continued to render service to Government employees under contract until December 31, 1924, when his contract expired, and was not renewed. On June 1, Dr. N. A. Strickland was appointed to succeed Doctor Wolfe.

#### CONGRESSIONAL INSPECTIONS AND INVESTIGATIONS

On August 6, Hon. L. C. Cramton, chairman of the subcommittee of the House Appropriations Committee on the Interior Department bill, accompanied by Congressman Frank Murphy, a member of the committee, and Mr. F. J. Bailey, Assistant Director of the Budget, entered the park at the eastern gateway, and until the 13th were engaged in inspecting the activities of the service. From August 12 to 22 the President's Commission on Coordination Between



National Parks and National Forests, headed by Congressman H. W. Temple, visited, with a pack train, the area proposed to be added to the park, and on August 22, at Jackson, Wyo., unanimously recommended the inclusion of the Upper Yellowstone and Thorofare country in the park, and the establishment of a separate unit of Yellowstone Park to include the Teton Mountains.

On August 28 to 30, inclusive, a subcommittee of the Senate Public Lands Committee, including Chairman R. N. Stanfield and Senators R. H. Cameron and T. L. Oddie, visited the park, inspected its improvements and utilities, and held hearings at Gardiner, where complaints against the park were presented, and in turn answered by park officers.

Altogether 4 United States Senators and 16 Members of the House of Representatives inspected Yellowstone during 1925.

## YOSEMITE NATIONAL PARK

W. R. LEWIS, Superintendent, Yosemite, Calif.

### ADMINISTRATIVE DEPARTMENT

*Headquarters office.*—The headquarters office was moved to the new administration building on the north side of the valley during the latter part of November, 1924, where administrative activities of the park have been carried on since that time with essentially the same personnel as during the preceding year.

*Appropriations.*—The park operated under an appropriation of \$318,934, of which \$238,934 was devoted to general administration, operation, and maintenance purposes and \$80,000 to new construction work. In addition to these funds provided for general operation and construction work there was made available for expenditure for the fiscal year 1925, \$354,000 for paving and reconstruction of roads in the park, with authority to obligate an additional \$310,000 for the same purposes.

*Revenues.*—Revenues were collected during the year ended June 30, 1925, and deposited in the general fund of the Treasury, as follows:

License fees and rentals.....	\$56,747.12
Automobile and motor cycle permits.....	77,167.00
Miscellaneous .....	3,164.54
<b>Total .....</b>	<b>138,078.66</b>
Less remittance fees.....	171.85
<b>Net total.....</b>	<b>137,906.81</b>

This is a material decrease from revenues collected during the preceding year, due to falling off in travel during the 1924 season and the accompanying decrease in sale of automobile permits.

### WEATHER CONDITIONS

Beginning in September, 1924, weather conditions began to improve materially with the ending of the extreme drought that had covered almost the entire year previous. Throughout the late fall months and the entire winter, and until June, 1925, precipitation was fully 50 per cent in excess of normal although the snowfall was relatively light, precipitation particularly below the 8,000-foot level being confined almost entirely to rain.

### GENERAL MAINTENANCE AND OPERATION

Maintenance of roads, trails, tools, and small equipment; care of public grounds; sanitation of public camping grounds; production of wood, hay, and shakes; care of stock, stables, and corrals; distribution of stock and employment of labor; operation of messes; hauling of freight; etc., were carried on under the direction of the park supervisor.

Due to the increased precipitation and particularly the later rains in the mountains in May and June, 1925, both roads and trails were more easily and effectively maintained than in the previous year. This was particularly true of the mountain roads which, in spite of the far heavier travel to

which they were subjected, were maintained in much better condition throughout the entire summer of 1925 than in any previous year.

#### ENGINEERING AND CONSTRUCTION DEPARTMENT

Under the supervision of the resident engineer there were constructed a garbage incinerator consisting of three units of sufficient capacity to handle all of the garbage and waste resulting from activities in Yosemite Valley; a new water supply in Illilouette Creek consisting of a small diversion dam, intake, and wood stave pipe line; approximately 9 miles of trail in the Tuolumne Canyon between Waterwheel Falls and Pate Valley; public comfort stations and ranger stations at Alder Creek on the Wawona Road, at the El Capitan Checking Station at the foot of the Big Oak Flat Grade, and at Soda Springs; and the extension of the sewer system into Camps 11, 12, and 14 including the installation of an electrically controlled and operated pumping station in Camp 12.

Road construction work under force account was also carried on, on the Wawona Grade between the floors of Yosemite Valley and Inspiration Point where nearly 2 miles of the existing road was widened to 20 feet, grades modified, and sharp turns eliminated, and on the roads in the Mariposa Grove of Big Trees where approximately 4 miles of existing roads were likewise reconstructed.

The maintenance of buildings and structures and the maintenance and operation of the water and sewer systems were also carried on under the direction of the resident engineer, as were also road surveys and general layout surveys in connection with the development of the new administrative center.

#### PROTECTION DEPARTMENT

The usual activities of fire suppression, traffic control, sale of permits, protection of fish and game, distribution of information to the public, etc., were carried on as usual by the ranger service under the supervision of the chief ranger. This work was done under the most severe handicaps under which the ranger service has ever been called upon to function. Wholly undermanned and unfortunate in securing a high percentage of unsatisfactory temporary rangers it is surprising that the situation was handled as satisfactorily as it was. It is a significant fact that the park is operating with a smaller ranger force than in 1916, with the travel more than six times as large. There is no question but that under the present conditions with the undermanned organization and inflexible methods of employing temporary rangers, this park has not been supplying service in the way of protection to its resources and to the public, and in the way of information to the public, that should be given and it is sincerely hoped that another year a more adequate ranger force may be authorized.

#### ELECTRICAL, TELEPHONE, AND TELEGRAPH SERVICE

*Power.*—No marked extensions were made to the park electrical system during the year. However, on November 13, 1924, as a result of a contract previously negotiated, the San Joaquin Light & Power Corporation completed a transmission line from El Portal to the park power plant and there it connected with the lines of the park system. Under this connecting agreement the park is enabled to purchase power at a low rate from the San Joaquin Light & Power Corporation during periods of low water and in cases of emergency breakdowns and also is enabled to sell surplus power generated at its plant to the corporation at such time as they are able to use such surplus power. Since the completion of the connection on November 13, 1924, the park plant has been able to deliver surplus power continuously and with the improved water conditions since the end of the drought period it has not been necessary to purchase power at any time from the San Joaquin Light & Power Corporation. As a further result of this connection the output of the power plant has greatly increased.

*Telephone service.*—Material improvement was made to the park telephone system during the year. With the completion of the new administration building a new two-position combination battery and magneto switchboard was



installed. All wires connected to this exchange enter the building underground. The exchange is equipped with 100 common battery lines and 20 magneto lines. It has an ultimate capacity of 400 common battery lines and 40 magneto lines and is also designed to have additional operator's position installed as increased demands necessitate. This gives the park first-class modern exchange equipment and has greatly increased both local and long distance service.

Thirty-six miles of new single wire telephone lines were built during the year, 18 miles of which were built between Merced Lake and Glen Aulin via Boothe Lake and Tuolumne Meadows, 15 miles between Aspen Valley Ranger Station and Pate Valley, and 3 miles between Cascades and Big Meadows.

Twenty-two hundred feet of lead encased telephone cable was placed underground in connection with the installation of the new switchboard thereby making possible the elimination of a number of unsightly telephone pole lines.

*Telegraph service.*—While the park is equipped with the necessary facilities for the maintenance of continuous telegraph service to the outside and every effort was made on our part to give such service, on account of construction operation in connection with the building of the Exchequer Dam, the new Yosemite all-year highway, and the new section of the Yosemite Valley Railroad, interruptions to service were frequent and oftentimes of long duration. Long-distance telephone service was similarly affected with the result that communications with the outside was far from satisfactory.

#### MECHANICAL SERVICE

Under the supervision of the master mechanic the machine shop was operated continuously throughout the year. All motor-propelled equipment was kept in continuous operation except during periods of overhauling and in cases of repair made necessary by breakdowns while in service.

#### TIMBER OPERATIONS

The timber operations of the Yosemite Lumber Co. and the cutting of wood and timber for fuel and other purposes in the park were supervised by the park forester.

The Yosemite Lumber Co. employed an average of 385 men at their logging camps during the logging season. They cut and shipped to their mill 72,667,779 feet, board measure, of logs taken from 1,832 acres of land of which 475 acres was in the park and 508 acres in the Stanislaus National Forest.

During the year a total of 1,825½ cords of wood was cut, of which 1,428 cords was cut for Government consumption and the remainder for use of operators and permittees in the park. About one-half of this wood was cut on the floor of Yosemite Valley from dead and fallen timber, and the remainder along the Wawona Road and the roads in the Mariposa Grove of Big Trees in connection with the reconstruction of these roads.

During the year the park forester also accurately measured all trails in the park and prepared a complete list of signs for adequate marking of the park trail system.

Under his supervision there were also produced 108,500 shakes from insect-killed sugar pines along the Wawona Road.

#### EDUCATIONAL WORK

The new museum building constructed by the American Association of Museums from funds contributed by the Laura Spelman Rockefeller Memorial Fund, was completed in May, 1925. This building was erected at a cost of \$50,000 and the work of equipping it is now under way. It should be ready for operation some time during the autumn of 1925. In the meantime the operation of the old museum was continued throughout the year with very gratifying results in the way of attendance, a total of 38,115 people having visited the museum during the year. More than 35,000 of these visited the museum during the months of May, June, July, and August. The American Association of Museums, together with others, also contributed toward the installation of a lookout and branch museum at Glacier Point.

The nature guide work, including regular nature guide trips, lectures, and camp fire talks, was continued with excellent results, more than 5,000 people



taking the nature guide trips and 39,176 attending the lectures and camp fire talks. A careful estimate shows that more than 83,000 people have been served by the educational department.

A new feature inaugurated this year was the Yosemite Field School of Natural History. This school was conducted under the direction of Dr. H. C. Bryant, whose services were kindly loaned by the California State Fish and Game Commission, a continuation of close cooperation the commission has been giving for the past five or six years.

The Secretary's approval of a broad educational program in the national parks has done much to stimulate those in charge of the work and also to stimulate public interest in this additional public service.

#### COOPERATIVE FEDERAL AND STATE ACTIVITIES

Other Federal and State departments and bureaus continued cooperative activities in the park. The Department of Justice, through the United States commissioner, a resident of the park, conducted all trials of violation of park regulations and penal Federal and State laws. During the year 46 cases were tried by the commissioner, resulting in 30 convictions and 16 acquittals. A total of \$410 in fines, and jail sentences aggregating 41 months and 25 days were imposed upon defendants found guilty.

The Post Office Department conducting post office activities greatly improved its service during the year by leasing a building constructed under contract specifically for post office purposes. This new building is located in the new administrative center.

The Department of Agriculture cooperated in many activities. The Bureau of Entomology continued its investigation of insect-control work; the Forest Service cooperated in fire-control work; the Bureau of Animal Industry and the Biological Survey cooperated in controlling the hoof-and-mouth epidemic among the deer; and the Bureau of Public Roads acted in the capacity of consulting engineers on road contract work. Each of these bureaus has given whole-hearted and valuable cooperation in its respective field.

The Treasury Department, through the United States Public Health Service, continued its cooperative efforts in assisting in the handling of sanitation and health problems.

The State of California, through the California State Fish and Game Commission, furnished approximately 400,000 trout fry for stocking the streams and lakes of the park and the governor of the State has definitely assured the National Park Service that a hatchery will be installed in Yosemite in the near future where not less than 1,000,000 trout fry may be produced annually for distribution in the waters of the park. The State also provided primary school facilities in a building erected by the State in 1917. The gradual increase of all-year operations brings yearly a larger permanent population with demand for increased school facilities. The present building can accommodate comfortably in its 2 rooms 50 children. During the season just passed, however, a maximum of nearly 75 children were instructed, and it was necessary to erect a tent to furnish additional space.

#### PROPOSED INTERDENOMINATIONAL CHAPEL

During the year the California State Federation of Churches began an active campaign for permanent installation of adequate church facilities, the object being the building of a nonsectarian church where services may be supplied members of all faiths. A separate organization, including representatives of practically all faiths on its board of directors, has been incorporated for the express purpose of raising funds for a new chapel and the furnishing of church facilities temporarily until permanent facilities are available. The consummation of plans of this corporation will provide church facilities available to all Christian faiths without discrimination. During the summer of 1925 Catholic services were provided in the old chapel while Protestant services were conducted in the auditorium of Pillsbury's studio. These latter services drew large numbers of people averaging through the peak of the season approximately 300 and reaching a maximum of nearly 600. In fact, on two or three occasions room was not available to seat everybody desiring to attend.

## PUBLIC UTILITIES—FRANCHISES AND PERMITS

The outstanding feature in public utilities operation was the consolidation of the hotel, camp, and transportation operations heretofore handled under separate franchises by the Yosemite National Park Co. and the Curry Camping Co. This consolidation not only augurs for better and more uniform service to the public, but permits more extensive financing for development. While the working out of legal technicalities of the new corporation was not completed this season, nevertheless the two concerns were operated as one under a consolidation agreement approved by the department. The experience of this year's consolidated operation indicates clearly that the unification makes for increased harmony between the operators and the Government, and increased and more satisfactory service to the public.

As a result of the moving of the various independent studios to the new village longer term contracts are being issued to these independent operators who, in previous years, have conducted their businesses on year-to-year permits.

The following franchises and permits were in effect, or in the course of approval, during the season of 1925:

Name	For what granted	Expiration	Annual rent
Mrs. John Degnan.....	Delicatessen store.....	Dec. 31, 1925	1 \$250
H. C. Best.....	Curios, photographs, etc.....	Dec. 31, 1934	1 250
A. C. Pillsbury.....	Photographs, etc.....	Dec. 31, 1939	(?)
J. T. Boyesen.....	do.....	Dec. 31, 1934	1 250
D. J. Foley.....	do.....	Dec. 31, 1930	1 250
Dr. Claude H. Church.....	Hospital, medical, and dental service..	Oct. 15, 1928	None.
Yosemite Stage & Turnpike Co.....	Automobile stage line.....	Dec. 31, 1931	100
Trustees of Yosemite school district.....	Lease of site for schoolhouse.....	Dec. 31, 1936	None.
Yosemite Park & Curry Co.....	Hotels, chalets, inns, camps, transportation service, stores, and dairy.	Dec. 31, 1944	(?)
B. Louise Patterson.....	Tenaya Lake Girls' Camp.....	Dec. 31, 1925	10

<sup>1</sup> 4 per cent of gross revenue, \$250 minimum.

<sup>2</sup> 22½ per cent of operating profits after deduction of 6 per cent on physical investment.

<sup>3</sup> 1 per cent to 4 per cent of gross revenues, depending upon amount.

*Lease, special use, and water-power permits under acts of February 7, 1905, segregating lands from Yosemite National Park and placing same in Sierra and Stanislaus National Forests*

Period	Name and privilege granted	Compensation exacted
Intermediate.....	Yosemite Valley R. R. Co. Lease dated Sept. 5, 1905, to construct and operate electric railway along Merced River to park boundary.	1 \$1,000
Perpetual.....	City and county of San Francisco. Congressional grant Dec. 13, 1913, rights of way for Hetch Hetchy water supply.	Variable.

<sup>1</sup> Per annum, on demand of Secretary of Interior.

All operators and permittees conducting business in the park report the most successful year of any in the history of the park.

## HOSPITAL AND MEDICAL SERVICE

The hospital and medical service, including dental service, continued to be operated under the direction of Dr. Claude H. Church. A materially increased demand for these services was noticeable throughout the year and again forced attention to the great need of more adequate hospital facilities, particularly in the shape of a new hospital building.

## TRAVEL

Travel to the park during 1925 showed a material increase over that recorded for any previous year. Following upon the heels of extreme drought conditions that prevailed during the season of 1924, accompanied by the hoof-

and-mouth epidemic among the livestock and deer in the State and an unusual forest fire situation, the improved water and financial conditions in the State in 1925 revived interest in touring and reports from various parts of the State indicate that Yosemite was favored with more than its proportionate share of increase. Inasmuch as there has been a falling off rather than an improvement in railroad facilities to the park, as was to be expected, almost the entire increase in travel was by motor.

The following tables give an analysis of the travel and also a comparison of the figures recorded for the previous year:

*Travel comparison, 1924-25*

Entrance	Roads	Number of automobiles	Number of people	Number of motor cycles	Number of people
<i>Season, 1924</i>					
Alder Creek.....	Wawona.....	10,655	33,860	27	44
Mariposa Big Trees.....	do.....	9,114	29,546	5	7
Crane Flat.....	Big Oak Flat.....	6,955	21,846	37	52
Merced Grove Trees.....	Coulterville.....	63	197	2	4
Aspen Valley.....	Tioga.....	2,630	7,855	7	11
Tioga Pass.....	do.....	3,272	9,833	5	8
El Portal.....	El Portal.....	125	316		
Total.....		32,814	103,453	83	126
<i>Season, 1925</i>					
Alder Creek.....	Wawona.....	16,038	50,801	32	42
Mariposa Big Trees.....	do.....	14,132	45,927	11	19
Crane Flat.....	Big Oak Flat.....	11,274	35,734	35	46
Merced Grove Trees.....	Coulterville.....	21	57		
Aspen Valley.....	Tioga.....	3,628	10,759	1	1
Tioga.....	do.....	3,961	12,000	4	5
El Portal.....	El Portal.....	175	465	1	2
Total.....		49,229	155,743	84	115

*Other means of transportation*

	1924	1925
Travel by auto stage other than El Portal.....	14,327	20,475
Travel via Yosemite Valley R. R. and El Portal stage.....	20,169	25,614
Travel by Hetch Hetchy R. R. (dam site).....	6,549	5,950
Travel by wagon, horseback, horse vehicle, and on foot.....	1,446	1,269
Total travel other than private auto and motor cycle.....	42,491	53,308

SUMMARY

Travel by private automobiles.....	103,453	155,743
Travel by motor cycles.....	126	115
Travel by auto stage other than El Portal.....	14,327	20,475
Travel by wagon, horseback, horse vehicle, and on foot.....	1,446	1,269
Travel by Yosemite Valley R. R. and El Portal stage.....	20,169	25,614
Travel by Hetch Hetchy R. R. (dam site).....	6,549	5,950
Total travel into Yosemite National Park.....	<sup>1</sup> 146,070	209,166

<sup>1</sup> Total count at all stations including duplications of 40,176.

*Segregation as to areas*

Visiting Yosemite Valley.....	117,920
Visiting Mariposa Grove.....	61,418
Visiting Tioga Road country.....	23,878
Visiting Hetch Hetchy.....	5,950
Total.....	209,166
Total registered campers in Yosemite Valley.....	47,547



## FISH AND GAME

While the drought conditions existing during 1924 materially decreased the fish life in the smaller streams of the park and created a condition which it will take many years to bring back to normal in the mountain streams and lakes, the effect does not seem to have been particularly serious in the larger streams and lakes. Reports from the Merced Lake, Washburn Lake, and the Tuolumne River areas indicate that fishing conditions during 1925 have been practically as good as usual. The increased advantage taken of fishing conditions in these areas, however, certainly will soon bring a condition of shortage unless control is undertaken by cutting down the fishing limit and giving closer supervision to fishing in the park, or unless a hatchery to supply additional fish is soon provided.

The extensive killing of the deer outside of the park, in the watershed of the Tuolumne River, in connection with the hoof-and-mouth control measures, has depleted the deer in the northern area of the park to one-half or even less than one-half of their original numbers. Fortunately the epidemic did not get among the deer on the Merced watershed and numbers here were not depleted. It is estimated that even with more than 20,000 deer killed in the Tuolumne watershed in connection with control work during the preceding season more than 50,000 deer ranged within the park boundaries. No infection has been found among the deer since early June and the season closes with a fairly positive assurance that the disease has been completely eradicated among the deer and that further control operations will probably be unnecessary.

## OTHER IMPORTANT EVENTS AND ACTIVITIES IN 1925

In April the Secretary visited the park and in addition to familiarizing himself with general park affairs gave particular attention to the proposed development program of the Yosemite Park & Curry Co. and approved the construction, on the site selected, of a new hotel installation with the completion of which for the first time there will be adequate hotel facilities in Yosemite Valley throughout the year.

A congressional delegation headed by Hon. Louis C. Cramton of Michigan, chairman of the Subcommittee of the House Appropriations Committee on Interior Department appropriations, and including Mr. J. S. Bailey, Assistant Director of the Bureau of the Budget, and Assistant in Operations and Public Relations Demaray of the National Park Service visited the park in June and gave serious study to the needs of the park.

Declaration of the city and county of San Francisco of their intention to comply immediately with the provisions of the Hetch Hetchy grant under which the city and county is obligated to build certain roads in the Hetch Hetchy area will mean that for the first time since the beginning of the city and county's activities in the park the northern part of the park, involving the entire lower watershed of the Tuolumne River, will shortly be accessible to park visitors.

The decision of the director, on the occasion of his visit in July, to build only high-standard roads in the park has met with wide approval, and while the ultimate cost of the park road system on these standards will be very materially higher than was anticipated under the original program of modification of existing roads, the benefits accruing in the way of greater ease of negotiation and safety more than offset the increased cost.

On May 19, during the convention of the California Medical Association in the park, that association unveiled a tablet in memory of Dr. L. H. Bunnell, the first white man to make known to the world the wonders of Yosemite Valley.

On May 30 the California Conference of Social Workers unveiled a tablet in memory of John Muir and marking therewith the location of the site\* of John Muir's sawmill and cabin which he occupied for a number of years during his early studies of the natural history of Yosemite National Park on which many of his later writings were based.

The placing of this and the Bunnell tablet is of interest and importance, in addition to commemorating men who were prominent in making Yosemite known to the world, in that this is the first time that any of the points of historic interest have been permanently marked. The placing of these two tablets will do much to stimulate public interest in historical points and activities in the park area.

The establishment of the Yosemite News Service, cooperatively by the Government and the Yosemite Park and Curry Co., has enabled the park for the first time to disseminate unprejudiced and impartial publicity on the park and its activities. The demand for publicity, news, and articles from newspapers, magazines, and periodicals from all over the country, proves in a measure the success of this news service in disseminating Yosemite information. It has also established a more helpful association with the press than the park has hitherto experienced.

## SEQUOIA NATIONAL PARK, CALIF.

JOHN R. WHITE, Superintendent, Giant Forest, Calif.

Steady progress was made despite small appropriations in development of park headquarters at Alder Creek, which is now linked by an excellent park road with the State highway. Considering that a total of only \$29,298 has been expended on construction of buildings, water and sewer systems, etc., at Alder Creek, the Government has secured an administrative plant at minimum cost. The administrative personnel is now 3 permanent and 5 temporary employees.

### PROTECTION—PARK RANGER FORCE

The force is now a chief ranger, 1 permanent ranger, and 15 rangers when actually employed, of whom about 5 are employed all year.

There were no complaints against the ranger force; on the contrary, many verbal and written compliments have been received on the courtesy and attention to duty not only of the ranger but of all park employees.

There were 6 complaints filed before U. S. Commissioner Walter Fry. Sentences were imposed in 5 cases, with a total in fines of \$80.

It may be considered that poaching has almost ceased while other violations are few and largely due to ignorance.

### GRAZING

A total of 730 cattle were grazed by 7 permittees, a reduction of 356 head from 1924. Steady progress is being made in reducing of number of cattle and grazing areas, the general policy being to reduce and abolish grazing as fast as areas are needed for accommodating visitors.

### FOREST FIRES

No man-caused fire was reported and this is due to our system of warning signs, of restricted camping, and to prohibition of smoking except in camps or at stations during the dry season. There were 27 fires caused by lightning which burned over 109 acres.

### TRAVEL

A total of 14,273 autos and 46,677 visitors entered the park, being 35 per cent increase in visitors over 1924 and 55 per cent increase over 1923. Analysis of origin of travel by automobile registration shows the following percentages:

	Per cent
San Joaquin Valley.....	15
Northern California .....	18
Southern California .....	50
Other States and foreign.....	17
	<hr/> 100

Of course many visitors from other States travel in cars registered in California while many more come in as guests of local people; while practically all the stage travel of 990 is of visitors from outside California.

It must be remembered that the park has had over 200 per cent increase in travel during the past five years, and this without advertising and despite poor roads. Now that the new entrance road is certain for 1926 travel and reorganization of the hotel insures accommodations and advertising, we must look forward to a big travel increase.

*Public auto camps.*—The camps at Giant Forest were improved by the fiscal year 1924-25 appropriation of \$40,000 for sewer system and will now accommodate about 2,000 campers. Additional funds are badly needed, so that construction in the spring of 1926 may keep pace with the increased number of visitors coming in over the new road. As fast as funds are available improvements are made in the camps; seats, benches, tables, and fireplaces are needed both for the campers' convenience and to avoid indiscriminate camping and damage to vegetation. For the sum of about \$10 a camp may be furnished with the essential conveniences which a motorist does not ordinarily carry with him. As private, municipal, county, and State auto camps outside the parks are becoming equipped with the conveniences, it is proper that we should keep pace in the national parks.

#### NATURAL FEATURES AND WILD LIFE

*The big trees and forests.*—Further protection was given the most visited sequoias. Signs were framed and placed at General Sherman and other trees. A beginning has been made at Giant Forest in reforestation not only by planting trees but by blocking off denuded areas so that flowers, ferns, and shrubs may be sown or planted.

*Fish.*—Contrary to expectation the severe drought of 1924 did not seriously diminish fish. Good sport was available in many park streams and lakes. Owing to an accident at the Hammond Hatchery we received only 140,000 trout fry, but these were raised by hand feeding at Giant Forest and will be planted in the fall, so that we expect to get better results than by planting as fry. The limit for streams adjacent to Giant Forest was reduced from State limit of 25 to 10 with good results.

*Wild life.*—Twenty-four bears were counted at the incinerator and thousands of visitors enjoyed their feeding hour. Deer are abundant and show no sign of disease. Only one or two mountain lion visited the park, and hunting was stopped until they become a serious nuisance again. Mountain beaver are at work at Giant Forest; weasels became so numerous that several were shot; opossums have invaded the Middle Fork region and were reported at Alder Creek. All wild life has been protected and is flourishing.

*Museum and nature guide work.*—Under Judge Fry steady progress was made in collections; there are now 355 flower and tree specimens; 5 mammals and 54 miscellaneous. The administrative building at Giant Forest was used as a museum but is congested. A fireproof building is a necessity.

Nature guide walks conducted by Messrs. Kobs and Sisson and Prof. W. Scott Lewis were well attended; a total of 999 visitors benefiting by the service. There were 36 lectures given by Judge Fry and others at camp fires and 10,446 persons attended. Talks on park policies, regulations, and general subjects of interest were given by various park officers.

#### MISCELLANEOUS SERVICE TO PUBLIC

*Library.*—The Tulare County Library again maintained a branch at Giant Forest, and Miss Gretchen Flower reports that 540 books were in the library and the circulation was 1,868.

*Religious services.*—Visiting clergymen officiated at Giant Forest center throughout the season, and Mr. George Hume, Mrs. Caro Bennett, and Miss Ella Evans managed the services and the outdoor church.

*Entertainments.*—Both at Giant Forest center and the Giant Forest lodge camp fire entertainments were held every night, those at the center being organized by campers. There was noticeable an improved spirit at the lodge.

#### PUBLIC OPERATORS AND UTILITIES

The only change in management of the public utilities was that the Kings River Parks Co. leased properties were successfully managed by H. H. Hunkins. Other utilities were also successively conducted.

The Sequoia National Park Stage Co. carried 990 passengers, as compared with 587 in 1924. Of these, 180 were Sierra Club members on annual outing.

#### CONSTRUCTION AND MAINTENANCE

*Sewer system.*—This system at Giant Forest was completed during the past summer under our allotment of \$39,500 for the 1924-25 fiscal year; 5 large



comfort stations and 5 small were installed, the large ones having showers for men and women as well as flush closets. These stations which have a total of 34 bowls now serve an average of 1,500 campers daily during summer months with a peak load of from 3,000 to 4,000. Sanitary engineers estimate 1 bowl to carry 30 people. It is plain that we already need additional stations and that when the influx of 1926 over the new road is upon us we shall be very short of toilet accommodations.

*Garbage incinerator.*—This incinerator of new design by H. B. Hommon, sanitary engineer, United States Public Health Service, has proved an entire success, not only as a means of garbage disposal, but as an attraction to bears. It is so located as to afford good views of these animals and scores of visitors are seen there every afternoon.

*Water system.*—Several breaks occurred in the 6-inch main line to Wolverton, but were promptly repaired. We have an adequate water supply but need funds for extension.

*Dormitory building.*—The dormitory at park headquarters was completed. It was intended to house unmarried employees and rangers but the road construction and other development have brought in so many transients that the dormitory has virtually been a hotel and another building will be needed for single men and clubhouse.

*Road construction.*—"The Generals' Highway" was finally linked up on July 25, 1925, but a vast amount of widening and improvement work remains to be done, particularly on the section of 7 miles between Hospital Rock and Deer Ridge built before arrival of Resident Engineer W. M. Austin. The appropriation of \$39,000 for the fiscal year 1925 carried the road barely to Deer Ridge, leaving nearly 2 miles of the heaviest rock excavation to be undertaken from road budget funds. Fiscal year 1925-26 funds of \$255,500 should be nearly sufficient to widen and surface the road to standard now adopted from park boundary to Giant Forest.

*Sanitary engineering division.*—Mr. H. B. Hommon of the United States Public Health Service has continued to assist us with valuable advice and has always promptly responded to our requests.

*Landscape engineering division.*—The occasional short visits of Mr. D. R. Hull have been valuable in adjusting our perspective; but an intensive study of immediate and future development problems is needed. We are making some progress in restoring denuded areas at Giant Forest and in protecting natural beauties from the ever-increasing crowds. It is hoped to assign a ranger definitely to this work and he should have more frequent advice and guidance from the landscape engineering division.

### CONCLUSION

In conclusion, it is pleasurable to reflect on the progress made during the past year. We are proud that the park has a good reputation for courtesy and service to the public and we intend to strive to maintain that reputation by our work through the coming year.

### Statistical summary

	1925		1924	
	Automobiles	Visitors	Automobiles	Visitors
Travel:				
By private automobiles.....	14, 009	45, 088	10, 816	33, 402
By stage.....	264	929	216	334
By other means of conveyance.....		660		732
Total.....	14, 273	46, 677	11, 032	34, 468
Travel by entrances:				
Giant Forest Road, Cedar Creek station.....	6, 601	21, 935	5, 240	16, 745
Middle Fork Road, Alder Creek station.....	5, 101	16, 345	3, 073	9, 834
Mineral King Road, East Fork station.....	2, 571	7, 988	2, 719	7, 314
South Fork Trail, Clough Cave station.....		272		389
Trails, all sources.....		137		186
Total.....	14, 273	46, 677	11, 032	34, 468
Hikers to Giant Forest during winter season.....		1, 220		442

*Statistical summary—Continued*

	1925	1924
Revenues:		
Net all sources, fiscal year .....	\$19, 283. 74	\$25, 858. 21
Automobile fees, travel season .....	\$10, 965. 35	\$8, 983. 50
Appropriations:		
General .....	\$56, 000. 00	\$55, 000. 00
New construction .....	\$40, 000. 00	\$46, 000. 00
Roads and trails (see note below) .....	\$229, 000. 00	
Middle Fork Road .....	\$40, 000. 00	\$35, 000. 00
Cases before United States commissioner:		
Total number cases .....	8	20
Convictions .....	7	20
Total fines imposed .....	\$130. 00	\$124. 50
Grazing:		
Number of cattle .....	730	1, 086
Number permittees .....	7	12
Area occupied (acres) .....	45, 140	51, 740
Fish planted .....	140, 000	210, 000

NOTE.—\$229,000 includes 1925-26 fiscal year appropriations available during 1925 construction season.

*Public operators*

	1925		1924	
	House-keeping	Lodge	House-keeping	Lodge
Kings River Parks Co.:				
Accommodations for guests .....			200	100
June .....			632	785
July .....			3, 157	826
August .....	1, 063	1, 613	2, 480	799
September .....	160	391	389	137
Total .....	1, 223	2, 004	6, 858	2, 647
	1925		1924	
Sequoia Stage & Transportation Co.:				
Passengers carried .....		990		587
Freight carried .....	110 tons, 52 pounds.		88 tons, 1,237 pounds	

**GENERAL GRANT NATIONAL PARK, CALIF.**

JOHN R. WHITE, Acting Superintendent, Alder Creek, via Three Rivers, Calif.

This park was created with Sequoia and Yosemite in 1890. Its usefulness must not be judged by its size for good roads and proximity to Fresno and other valley towns make heavy demands on its accommodations. During the year 11,108 autos and 40,517 visitors entered as compared with 9,118 autos and 35,020 visitors in 1924, a gain of 15 per cent.

Steady progress has marked the past year. Seven large comfort stations were built and are the first of many more needed to accommodate the growing crowds. An improved camp police and garbage-disposal system was instituted. Chief Ranger Milo S. Decker, with four temporary rangers, handled the public well and there were many favorable comments on the courtesy of employees and service to the public.

Messrs. Evans and Foster operated the leased properties of the Kings River Parks Co. and gave good service. Nothing is more needed in the park than permanent operation of Grant Park lodge by responsible parties such as those who have operated during this past season.

The imminent construction of the Generals' Highway connecting General Grant Park direct with Sequoia by a mountain road as well as the actual growth of the park make it necessary to continue improvements and construct additional facilities for handling the growing crowds. Among the

urgently needed construction are an entrance gateway and ranger station, a post-office building, an enlargement of administration building with provision of space for museum and nature guide work, two cabins for ranger quarters, extension of sewer system and comfort stations, and a warehouse and workshop.

During the past year progress has been made in administration of the park and in systematizing operations from the Sequoia Park headquarters at Alder Creek. By an arrangement with the Forest Service the telephone line from Three Rivers to Pinehurst was extended to the park and is used when the direct line from Giant Forest to Grant Park is closed for winter.

It may be said that General Grant Park has passed through a successful year and that the park is steadily growing in usefulness to the Nation as well as to local communities. The following statistical summary is submitted:

*Statistical summary*

	1925		1924	
	Automobiles	Visitors	Automobiles	Visitors
By private automobiles.....	11, 108	40, 517	9, 118	33, 802
By stage.....				398
By other means of conveyance.....				820
Total.....	11, 108	40, 517	9, 118	35, 020

	1925	1924
Revenues:		
Net, all sources, fiscal year.....	\$3, 104. 32	\$3, 929. 02
Automobile fees, travel season.....	\$3, 503. 79	\$3, 171. 98
Appropriations:		
General.....	\$12, 180. 00	\$14, 175. 00
New construction.....	None.	None.
Cases before United States commissioner:		
Total number of cases.....	2	11
Convictions.....	None.	11
Total fines imposed.....	None.	\$42. 50
Fish planted.....	None.	None.
Approximate number wild animals in park:		
Deer, in vicinity.....	500	500
Bear.....	None.	None.
Lion, periodically.....	2	4

Public operators	1925		1924	
	House-keeping	Lodge	House-keeping	Lodge
Kings River Parks Co., Evans & Foster, lessees:				
Guests during season--				
June.....	524	184	74	153
July.....	3, 256	308	185	155
August.....	3, 010	290	69	120
September.....			50	47
Total.....	6, 790	782	378	455

## MOUNT RAINIER NATIONAL PARK

OWEN A. TOMLINSON, Superintendent, Longmire, Wash.

The second successful winter operation and the increased travel during every month of the year have firmly established Mount Rainier National Park as an all-year park. Maintaining an open road to Longmire Springs and the providing of comfortable hotel accommodations at that point and Paradise Valley met with popular response. Winter equipment such as toboggan slides, four-horse sleighs, Alaska dog sleds, skis, snowshoes, etc., provide the means for the enjoyment of snow sports for thousands of people and the accessibility during the entire year makes the park serve a greater usefulness.



## ADMINISTRATION

The park affairs are administered by a superintendent, who is aided by an assistant superintendent, chief ranger, five permanent rangers, a general foreman, a park naturalist, and one clerk accountant. During the summer season this force is increased by 17 temporary rangers, 3 clerks, 3 telephone operators, a maintenance and construction force of about 90 men, including mechanics, truck drivers, linemen, and unskilled laborers. The maximum number of employees on the pay roll during the past year at one time, including appointees and temporary laborers, was 130.

The United States commissioner for the park, Hon. Edward S. Hall, tries all cases for violations of the park rules and regulations. During the travel year 15 cases for violation of park regulations were taken before the commissioner, resulting in 14 convictions and 1 dismissal. Sentences carried a total of \$215 in fines, of which five cases, totaling \$110 in fines, were suspended.

*Appropriations.*—The park operated under an appropriation of \$116,230, of which \$84,239.78 was expended for the general administration, protection, operation, and maintenance purposes and \$27,824 on new construction.

*Revenues.*—Revenues were collected for the year ended June 30, 1925, and turned into the General Treasury as follows: Automobile and motor cycle permits, \$46,857.09; miscellaneous, \$1,047.71; total collected, \$47,904.80.

## PUBLIC UTILITIES

*Winter service building, Paradise Valley.*—To meet the increased demands for winter accommodations at Paradise Valley the Paradise camp building was remodeled by the Rainier National Park Co., and an addition constructed to provide room accommodations for at least 60 people. The entire building is lighted by electricity, the lobby being heated by wood stoves and the rooms by electric heaters, providing excellent winter accommodations.

The increase in the number of summer visitors to Paradise Valley, particularly the number of out-of-State visitors during the past year, has emphasized the urgent need for additional hotel accommodations at Paradise Valley. Bungalow tents maintained as a part of the Paradise Inn operation are not popular with the visiting public. A great majority of the patrons prefer rooms inside the building and are willing to pay the additional charge for that class of accommodation. An additional unit of the Paradise Inn annex planned to contain 60 rooms, should be constructed at the earliest possible date in order to provide for the increased demand for inside accommodations.

## HIGHWAYS AND RAILROADS TO PARK GATEWAYS

Eight miles of new paving was laid during the past summer on the Mountain Highway connecting the Nisqually or southwesterly entrance with the Pacific Highway at Tacoma. This leaves only 13 of the 56 miles unpaved between Tacoma and the park, 8 miles of which will be paved next year. The Naches Pas Highway approach to the White River or northeasterly entrance has been improved and is maintained in excellent condition. A contract was let by the State highway department for improving 18 miles of this road on the east side of the Cascades and the plans are to let contracts next year for the construction of the 8 miles between the two sections of the highway which will open up a new route across the Cascades.

The Pierce County section of road between Fairfax and the national forest approach to Carbon River or northwesterly park entrance has been improved and surfaced with gravel. This section of road is now in good condition for summer travel. The 3 mile section of forest road has not been improved and is in very poor condition.

The state and national forest highway approach connecting the Ohanapechosh or southeasterly entrance with the Pacific Highway south of Chehalis is being rapidly improved and placed in first-class condition. This year a contract for reconstructing the section between Randle and Lewis was let. From Lewis to the Clear Fork River, 6 miles from the park, the road is in good travel condition for summer use. From Clear Fork to the Hot Springs, one-fourth mile from the park entrance, a one-way road constructed by private interests is passable for automobiles.

## TRAVEL IN 1925

Travel for the year ended September 30, 1925, totaled 173,004 people and 39,860 private cars, which is an increase of 7 per cent in people and 4 per cent in cars over the highest previous record of 161,473 people and 38,351 cars in 1924.

The largest travel day in the park this year was July 4, when 7,072 people and 1,745 cars registered at the 4 entrances. The largest travel week recorded was from August 6 to 12 when 15,197 people and 3,499 cars entered. July, 1925 was the heaviest travel month with 58,868 people and 13,733 cars.

Of the total of 154,822 visitors entering the park in private automobiles 69,978 or 45 per cent patronized the various public camp grounds, of this number 47 per cent were transients, availing themselves of the use of these camps for cooking one or two meals only. The balance were overnight visitors, remaining one day or longer.

*Summary*

Methods of transportation	Nisqually entrance		White River entrance		Carbon River entrance		Ohanapecosh	Total	
	Cars	People	Cars	People	Cars	People	People	Cars	People
Private autos.....	30,853	120,287	7,876	30,584	978	3,722	-----	39,707	154,593
Ashford stage.....	553	5,946	-----	-----	-----	-----	-----	553	5,946
Seattle and Tacoma stage.....	1,038	9,934	-----	-----	-----	-----	-----	1,038	9,934
Motor cycles.....	120	180	28	44	5	5	-----	153	229
Horseback.....	-----	4	-----	15	-----	94	43	-----	156
On foot.....	-----	18	-----	8	-----	298	1,822	-----	2,146
Total.....	32,564	136,369	7,904	30,651	983	4,119	1,865	41,451	173,004

Travel from States east of the Mississippi River.....	14,173
Travel from States west of the Mississippi River.....	157,224
Travel from United States Territorial possessions.....	137
Travel from foreign countries.....	1,470
Total travel for year.....	173,004

## WEATHER CONDITIONS

Weather conditions for the past year have been about normal. The coldest weather ever experienced in the park occurred just before Christmas, when it was 6° below zero at Longmire and 18° below at Paradise Valley. About the 1st of January rains commenced and continued throughout the remainder of the winter and spring. The longest period without rain recorded in the park was from June 15 to August 20, during which period the lack of precipitation greatly increased the fire hazards. Snow completely disappeared at Paradise Valley by July 15, about two weeks later than in 1924. During the early part of August the visibility was poor, due to forest fires adjacent to the park.

## FREE PUBLIC CAMP GROUNDS

Public camp grounds provided with running water, toilet facilities, tables, camp stoves or grills, and electric lights are maintained at Longmire Springs and Paradise Valley. These camps were extended during the past year, until they now accommodate about 800 people each. In the northeastern section of the park the White River Public Camp will accommodate about 500 people. Space and toilet facilities were provided for camping at Ipsut Creek, on the Carbon Road, to accommodate about 400 people. In addition to the above camps, unimproved sites are located in Hansen's Camp, Kautz Creek, Van Trump Camp, on the Nisqually Road, and at several points on the White River Road, that will accommodate about 600 or 700 people.

The new camp at Longmire was completed and opened on August 5, greatly relieving congested conditions at that place. The new camp is provided with a surfaced road, 2 comfort stations, running water and 20 drinking faucets and electric lights.

Over 4,000 feet of 4 and 2 inch mains and 3,000 feet of service pipe to 30 drinking faucets were installed in the Paradise Public Camp this season. The comfort station, laundry, and bath completed last year and a new one completed this year were opened for use, and an electric lighting system was installed. These improvements to the Paradise Camp have more than doubled the capacity of camping facilities.

#### NATURAL FEATURES OF THE PARK

Nothing of an unusual nature occurred during the year with reference to the natural features of the park. Several small fires were fortunately discovered in time to prevent any serious damage to the forest. An exceptionally favorable growing season resulted in a profusion of wild flowers blooming throughout the entire summer season.

*Wild life.*—Goats, deer, and bears were frequently seen, and from all indications the large animals, as well as the numerous smaller animals, are on the increase.

*Fish.*—Lakes Louise and Reflection, near Paradise, and Lake George, near the southwestern corner of the park, provided excellent trout fishing throughout the summer. Early in the season good fishing was had in the Nisqually River, but later during the summer, when the water was muddied from the melting of the glaciers above, few were able to take fish from this stream. Mowich Lake on the northwest side is well stocked with cutthroat and eastern brook trout, but owing to the abundance of natural food anglers were unable to take many fish from that lake.

Approximately 200,000 trout were planted in the park streams during the year.

#### EDUCATIONAL SERVICE

The nature-guide service under the park naturalist has grown so that the three men detailed for that work were hard put to adequately serve the public. By means of field parties taken out on nature trips, illustrated camp-fire talks, exhibits of wild flowers at both Paradise and Longmire, and a small museum at Paradise containing mounted birds, animals, and other natural-history specimens the work was carried out. The nature-news bulletins were issued weekly during the summer season and monthly during the remainder of the year in addition to a weekly information bulletin during the summer. During the summer season approximately 2,900 people were taken out on nature-guide field trips, 35,000 people listened to lectures on the natural history of the park, 40,000 people visited the information offices at Longmire and Paradise for various sorts of service, and 280 people were taken on special trips. Nature-news bulletins were distributed to over 200 people each issue, making a total of over 75,000 people served through the educational service.

#### PARK MAINTENANCE

Thirty-five miles of automobile roads, 175 miles of trails, 150 miles of telephone lines, 4 large and several small public auto camps, various buildings and shelter cabins, and other miscellaneous improvements were maintained during the year.

Practically all of the park improvements were provided at a time when summer travel only was considered. Now that the operation extends throughout the year, maintenance problems have greatly increased. Plumbing, sanitation, telephone, electric lighting, heating, and other facilities designed for summer use are especially difficult to maintain and will continue unsatisfactory and expensive to maintain until they are reconstructed for winter use.

*Nisqually Road.*—Despite the expenditure of over half of the year's maintenance funds during July and August in repairing wooden bridges, log retaining walls, and surfacing, the 20 miles of road was in worse condition at the end of this travel season than at the same time last year.

*White River Road.*—All maintenance funds available for this 7 miles of road and a considerable sum from a special allotment were expended in repairing damage caused by an overflow from the river. This road was in very poor condition during the entire summer season.

*Carbon River Road.*—Over \$4,000 was expended in repairing washouts, removing slides, and in building revetments to protect the road from the river. This 8 miles of road is passable only in dry weather.



*Trails.*—The park trail system was in better condition at the close of the travel year than ever before. A more liberal maintenance fund permitted of considerable improvement. Several rotten bridges were replaced with new structures and many dangerous switchbacks and boggy places were repaired.

*Telephone lines.*—Telephone lines were improved and placed in as good condition as funds would permit. The telephone system which was installed several years ago requires a complete overhauling and additional circuits to handle the increased volume of business. Revenues derived from telephone tolls are increasing, making the system partially self-supporting and it is necessary that the entire system be greatly improved and extended to keep pace with demands.

*Buildings.*—Nearly all of the fund provided for maintenance of buildings was expended during the year on the construction of brick flues and chimneys to replace dangerous stovepipes and flues which were installed when the houses were constructed. Several small fires which came dangerously near destroying some of the few buildings had made it necessary to eliminate all possible fire hazards. This was done notwithstanding that many of the buildings were in need of repairs which could not be made.

#### IMPROVEMENT WORK

*Longmire Public Auto Camp.*—A half mile of approach road and a half mile of camp road were completed and surfaced, two comfort stations constructed, water-supply and lighting system installed, and clearing of camp sites sufficient to accommodate about 200 cars provided additional camp accommodations which were urgently needed at Longmire Springs.

*Paradise Public Auto Camp.*—Two thousand one hundred feet of 4-inch and 2,200 feet of 2-inch water main, and approximately 3,000 feet of service pipes, were laid and 36 drinking faucets were installed. Water was piped to the comfort station, laundry, and shower bath constructed last year and a new comfort station constructed. Electric lights were placed in each of the three comfort stations and at several points in the camp ground. The additional facilities provided this year more than double camping accommodations at Paradise Valley but even these accommodations were insufficient and must be greatly extended.

*Carbon River Public Auto Camp.*—Space was cleared and latrines provided to care for 400 people at Ipsut Creek on the Carbon Road.

*Trails.*—The Skyline Trail in Paradise Valley over which an average of 40 horses travel daily during the summer was widened, drained, and generally improved until that trail is now in excellent condition. It is the most popular trail in the park.

Fifteen miles of the Wonderland Trail in Paradise and Longmire districts were improved, new bridges constructed several dangerous switchbacks widened, and the trail placed in good condition.

A new trail three-fourths of a mile long connecting the Trail of the Shadows near Longmire Springs and the Indian Henry Trail was constructed through the cooperation of the Eagle Scouts, Seattle Council, Boy Scouts of America. The Eagle Scouts also constructed three-fourths of a mile of trail on the south side of the Nisqually River at Longmire, connecting the auto camp road and the trail to Paradise Valley.

*Camp Muir Shelter Cabin.*—Two toilets were constructed at the Camp Muir Shelter Cabin, which is the overnight stopping point for summit parties.

#### THREE-YEAR ROAD PROGRAM

Of the \$1,024,000 authorized for expenditure on road development in Mount Rainier National Park, under the national parks' roads and trails law, \$235,000 was available this year. Of this amount \$210,000 was allotted for the improvement of the Nisqually Road, including the construction of five concrete and two rustic log bridges, several concrete culverts, and general betterment. A contract was let for the construction of the bridges on August 1, which calls for the completion of three concrete structures this fall. Engineering data will be available in time to permit of letting a contract this fall for the reconstruction, general betterment, and surfacing of the section of road between the entrance and Longmire Springs; \$25,000 was allotted for surveys on the west side and Yakima Park roads, the work of which is in progress and should be completed late this fall.

## CRATER LAKE NATIONAL PARK, OREG.

C. G. THOMSON, Superintendent, Crater Lake, Oreg.

The winter snow load was unusually heavy and persistent, resulting in a considerable snow removal problem. The west and south roads were opened to the rim June 27; the east road July 30; the north road July 14; and the rim road July 27. July was the hottest month in our recorded weather history, reaching the maximum of 91° F. August was cool with early rains and two light snows. September, as always, was the banner month. Wild flower gardens were unusually brilliant and persisted throughout August; low vegetation was unusually lush; springs and creeks were active throughout the season; the lake level raised 26 inches above last year's low level.

### PARK MENACES

Low humidity and electrical storms brought early fire hazards, so that we were fighting forest fires in June while other crews were shoveling snow. July brought one serious fire in the huge stand of dead lodgepole pine (beetle-killed) in the northwest section of the park, burning over some 300 acres. Five other fires, including one on the crater wall, were easily controlled with an aggregate burn of less than 150 acres. A high pressure pump with 1,000 feet of hose was of great value where water was available. Only one fire was due to campers' carelessness. A fire lookout was maintained on Mount Scott during July and August.

The ravages of beetles among lodgepole pine were controlled in the area of the park south of the lake, probably saving that entire stand for a number of years. The work would have been more efficacious if control work had been carried on in adjacent Indian and forest reservations. No control work could be undertaken in the northern half of the park where immense stands have died during the past decade, presenting a serious fire hazard.

### ROADS

*Approach roads.*—The Klamath and Medford approach roads were excellently maintained all year. Full width macadam, they are excellent roads of their type, but complaint of extreme dustiness has reacted in a movement to provide pavement. The uncompletion of the Dalles-California Highway and of the spur connection to the park made that road miserable, and little used. The Diamond Lake Road was not improved.

*Road construction.*—The undertaking of projects 1 and 2 made important park history. Contingencies that apparently could not be foreseen by contractors unfamiliar with the region delayed progress, but there was considerable accomplishment. The 6.8 miles of the Medford entrance was realigned, grades and curvatures reduced, and two bridges replaced with fills; the 8.1 miles of the Klamath entrance was also corrected and similarly freed of unnecessary hazards. A penetration macadam pavement, 16 feet wide, was laid over about 8 miles—a dustless road bed that will transform park travel. It is expected that the 18.3 miles authorized will be completed before mid-season next year, providing pavement as far as Government camp. This work was carried on with a minimum of detours.

*Road maintenance.*—The balance of the road system was maintained as satisfactorily as road surfaces permitted. As usual the bulk of road maintenance was done after the beginning of fall rains. Over 20 per cent of road funds were expended in snow removal.

### TRAILS

The heavy spring slides necessitated an unusual amount of work on the trail to the lake, practically exhausting our trail allotment. Consequently other trails were not well maintained, but sufficiently so for safe use.

### TELEPHONE SYSTEM

Telephone service was more satisfactory than heretofore. The lines to the Backbone and the Wine Glass were not brought into operation, being so little

used as to make the work uneconomical. Ten miles of new No. 8 wire were strung from Government camp to the east entrance; a 3.5-mile line was constructed to the fire lookout on the crest of Mount Scott a new switchboard was installed and much attention given to the efficiency and permanency of main lines, particularly as to perfect grounds and soldered connections. Results were gratifying but much remains to be done.

#### NEW CONSTRUCTION

Appropriations permitted little new work. A small garage was constructed; and considerable sanitary improvements made, including one new comfort station and septic tank, a 2,700-foot 4-inch pipe line laid from the pumping station to the rim tanks, and other minor improvements.

#### MAINTENANCE AND ALTERATION

A considerable miscellany of alteration and repair was accomplished, including new shake roof on two buildings, alteration and painting of superintendent's residence, new floors and windows in the information office, remodeling of kitchen at Government camp bunkhouse, installation of generating plant and wiring of Anna Spring buildings, construction of a fine massive log arch at south entrance, some general painting and staining, and a general clean up of functional areas. Much of our alteration was accomplished with material salvaged from condemned structures.

As usual, endeavor necessarily was concentrated upon road maintenance, sanitation, and all those other problems incidental to the safety and comfort of tens of thousands of visitors.

#### TRAVEL IN 1925

Despite a season that opened five weeks later than last year and exaggerated reports of detours necessitated by road construction, travel again exceeded previous records, with a total of 19,451 cars and 65,018 visitors. The Medford entrance again led in popularity. Travel to and from Diamond Lake could not be accurately gauged because of lack of rangers. It is regrettable that our official opening still is delayed until too near the peak of the season; while the park remains open through the greater part of October, the last six or eight weeks is of little importance, as travel becomes negligible after Labor Day.

#### *Total season travel by entrances, 1925 and 1924*

Gateway	By automobile		By motor cycles		By stage	Other means	Total visitors
	Cars	Visitors	Cars	Visitors			
1925							
East.....	761	2, 502				3	2, 505
South.....	5, 320	17, 396	7	10	171	203	18, 320
West.....	9, 758	32, 319	25	38	613	78	33, 048
North.....	85	285					285
Anna Spring.....	3, 527	10, 790	10	11	38	21	10, 860
Total.....	19, 451	63, 832	42	59	822	305	65, 018
1924							
East.....	676	2, 246				4	2, 250
South.....	6, 720	22, 303	12	20	224	313	22, 860
West.....	10, 867	35, 179	18	34	537	203	35, 953
North.....	52	201				4	205
Anna Spring.....	986	3, 020			13	11	3, 044
Total.....	19, 301	62, 949	30	54	774	535	64, 312



*Revenues*

	1925 fiscal year	1924 fiscal year
Sale of automobile and motor cycle permits .....	\$39,395.57	\$30,134.50
Collected from concessionaires and miscellaneous .....	393.92	361.43
Total revenues .....	39,789.49	30,495.93

*Appropriations*

Act	Fiscal year	Purpose	Amount
June, 1924 .....	1925	Administration, maintenance, and protection .....	\$30,700
March, 1925 .....	1926	do .....	35,980

Crater Lake National Park was better than self-sustaining, revenues for the 1925 fiscal year exceeding the 1926 appropriations, exclusive of the road budget, by \$3,809.49.

## PUBLIC UTILITIES

The Crater Lake National Park Co. operates a hotel, two small stores, an auto stage service, and a boat service on the lake. Only minor improvements were made this year in public utilities, including the completion and finishing of 9 rooms, making a total of 92; 8 new rowboats; and a complete and ample sewage-disposal plant.

Fred H. Kiser, official photographer of Crater Lake, added an electric-light plant and a completely equipped laboratory for quick film service.

The Standard Oil Co. operated the service station at Anna Spring.

## WILD LIFE

All wild life, excepting deer, were less in evidence than in late years. Some of the best-known bear were not identified throughout the year, possibly due to wider range of these canny animals, and use of road contractor's and other new garbage dumps. Deer were more in evidence than usual but with less fawns than last year. The band of elk planted in Klamath County, usually in evidence along our southern border, were not seen all year; two of these nine elk were killed by Indians and the fate of the balance is unknown. Some cougars, coyotes, wolves, and small predatory animals were in evidence. Small wild life was much diminished, particularly marmots, squirrels, and chip munks. Due to causes for which no sound explanation has been advanced, bird life was sadly diminished.

## FISHING

Fishing in the lake was reported as generally better than in previous years. Stream fishing was insignificant. Heavy plantings of rainbow and silverside fingerlings were made in the lake; four fine trout streams heretofore sterile were planted with eastern brook and loch leven.

## ACKNOWLEDGMENTS

The park and the service are indebted to the Medford Chamber of Commerce for the purchase of 5,000 park folders for free distribution; to Mr. Fred H. Kiser, official photographer of Crater Lake, for the equipment of the community house with a stereopticon apparatus and a fine collection of outdoor slides of the Northwest with which he entertained thousands of campers at evening lectures; to the Oregon Legislature for the statutory protection of bears in a considerable area surrounding the park; to the Oregon State Game Commission for heavy plantings of fingerlings in our lake and streams. Various Federal and State officers have contributed time and talents to our

problems and I also wish to acknowledge, on the part of employees, a degree of cooperation and interest not heretofore attained.

## PLATT NATIONAL PARK

FOREST L. CARTER, Superintendent, Sulphur, Okla.

During the year just passed Platt National Park has had more people than ever before. Some 40 States were represented, besides Canada, Cuba, Mexico, and Alaska. The following table shows how Platt has steadily increased in popularity:

### Visitors for past seven years:

1919-----	107,918
1920-----	173,310
1921-----	216,022
1922-----	246,998
1923-----	470,840
1924-----	539,495
1925-----	573,522

### Campers for past seven years:

1919-----	689
1920-----	2,981
1921-----	10,526
1922-----	23,170
1923-----	74,589
1924-----	95,272
1925-----	43,823

There have been more people using Platt National Park than ever before as a summer resort and park. This year campers seem to be more transient than heretofore. Campers coming to Platt used 10,608 automobiles and 141 teams.

### ROADS

Congress appropriated \$42,000 for road work on Platt National Park. Contract has been let and work is progressing on the roads now. The roads were made for horse-drawn vehicles and they are being widened, graded, and resurfaced and made as good as the highways leading to Platt.

### IMPROVEMENTS

During the past year two cottages were renovated and rebuilt. Quite a lot of painting has been done. A rest room has been built on top of Bromide Mountain for the comfort of visiting tourists. A number of old fences have been torn down and removed. The buffalo range has been enlarged and fenced. The camp grounds have been improved by extending water lines, furnishing new comfort stations and garbage cans.

### SPRINGS

The principal springs are the Bromide, Medicine, and Sodium Chloride Springs in the western part of the park; the Black Sulphur, Bromide Sulphur, Pavilion, and Hillside Springs in the central part; the Antelope and Buffalo Springs in the extreme eastern part of the park. The Antelope and Buffalo Springs are nonmineral in character and flow from an elevation of 1,080 feet above sea level. These springs are the source of Travertine Creek, and usually flow some 5,000,000 gallons daily, but during the past six months they have both been dry. The Bromide Spring is considered the most wonderful. Its waters are considered a cure for many troubles. The Black Sulphur Spring is becoming very popular and many people drink therefrom. The mud formed by this spring is also used in taking mud baths and is found to be very helpful in many cases.

### ANIMALS

The park animals are a source of great pleasure to many coming to Platt. We have a fine baby buffalo this summer, making four in all. There are now six deer and three elk in Platt Park.

## WIND CAVE NATIONAL PARK

ROY BRAZELL, Superintendent, Hot Springs, S. Dak.

The Wind Cave Game Preserve, maintained by the Department of Agriculture, is a part of the Wind Cave National Park and an interesting feature to visitors. The pasture contains bison, elk, antelope, and a few deer.

## VISITORS

There was a surprising increase in number of visitors, 69,267 persons having visited the park in 1925 as against 52,166 in 1924. Of the total, 68,875 came in 22,598 private automobiles. All the States of the Union, except Georgia, Delaware, and Nevada, were represented and there were visitors from 10 foreign countries.

A large proportion of visitors camped in the park. The grounds were enlarged last year.

## ROAD WORK

The entire park road is being rebuilt this year to conform with roads to north and south of the reserve. It will be finished and in fine condition for season of 1926.

## PUBLIC OPERATOR

A franchise to haul passengers for hire from Hot Springs to Wind Cave and return is held by Larsen and Dean, of Hot Springs. First-class service was maintained during the year.

## WATER SUPPLY

The park water supply is entirely inadequate to accommodate the ever-increasing number of visitors, and a new source must be provided in the near future.

## CONSTRUCTION

A new house over entrance to the cave was built this year.

## PREDATORY ANIMALS

The combined and continuous efforts of the United States Biological Survey, the State of South Dakota, and local ranching interests have served to appreciably lessen the number of coyotes, wild cats, and magpies.

## GRAZING

Grazing privileges were granted to the neighboring ranchers. A remarkable decrease in number of applications for permits to graze cattle the past two years indicates a marked decline in the local cattle raising industry.

## APPROPRIATIONS AND REVENUES

The appropriations for the fiscal year 1925 were \$10,000. Park revenues from all sources for the fiscal year 1925 aggregated \$4,342.61.

## SULLYS HILL NATIONAL PARK, N. DAK.

W. R. BEYER, Acting Superintendent, Fort Totten, N. Dak.

A few conveniences were installed during the year from funds made available by the Bureau of Biological Survey of the Department of Agriculture, which maintains a game preserve here. The park receives no appropriations, as such, from Congress.

The park showed an increase in visitors, 9,183 having entered the reservation during the year ended September 30, 1925, as compared with 8,035 last year.

Federal-aid highway No. 249 is being built along Sullys Hill Beach. This when completed, will give a good road from the city of Devils Lake to Sullys Hill and Fort Totten. Next year it is planned to continue Highway No. 249 west 11 miles and connect with State Highway No. 4. Sullys Hill Park can then be conveniently reached from either the Red Trail or the Roosevelt Highway. These good roads should more than double the number of visitors.

The following is a report of the mammals and game birds in the preserve, and their disposal:



Kind	In 1924	Disposed of	Increase 1925	Total in park Aug. 15, 1925
Buffalo.....	14	3	3	14
Elk.....	53	20	10	1 43
Deer.....	1	0	0	1
Antelope.....	0	0	0	2 2
Pheasants.....	14	6	21	30
Ducks.....	60	0	75	1 135
Geese.....	6	0	0	6

<sup>1</sup> Or more.<sup>2</sup> Donated.

## MESA VERDE NATIONAL PARK

JESSE L. NUSBAUM, Superintendent, Mancos, Colo.

During the summer season the headquarters of the Mesa Verde National Park were maintained in the park. In November the office force will again be moved to the rail, mail, and telegraph head at Mancos before the roads are completely closed by snow. I will remain in the park during the winter, as only in this way can I personally carry on and direct the winter work here, and will keep in close contact with the Washington office by telephone connection with the clerk at the Mancos office.

### WEATHER

The precipitation for the past season has been above normal, although there was a deficiency in snowfall during the winter months. January was abnormally severe and cold. Exceptional general rains in late August and during the first half of September, over all southwestern Colorado, reduced tourist travel to less than 50 per cent of normal, although the balance of the open-park season was generally favorable to travel.

### TRAVEL

Mesa Verde can never hope to compete with the other great national parks in volume of travel, because of its comparative isolation. It is approximately 175 miles from the park north, south, or east to the nearest standard-gauge Pullman rail lines, and equally distant to the north or south to the great east-and-west transcontinental highways. Colorado's excellent system of scenic mountain highways bridging the 350-mile backbone of the Rockies separating this area from the great tourist centers about Denver and Colorado Springs, have greatly stimulated travel to the park, particularly the Durango-Silverton-Ouray Highway.

No press or other publicity has been sent forth from this office to encourage travel to the area because of the acute water situation. Heavy rains at opportune times replenished the reservoirs and at the same time that held up a heavy influx of visitors, thereby enabling us to keep the park open during the season, notwithstanding the water shortage.

Approximately 93 per cent of the total travel entered the park in privately owned automobiles; 2½ per cent by rail and stage; the balance by wagon, horseback, hiking, and on park and employees' conveyances. During the season visitors registered from every State in the Union, from the District of Columbia, and from Canada, England, China, Holland, New Zealand, Portuguese East Africa, Mexico, Ireland, and Sweden, truly emphasizing the world-wide interest in this unique area.

### *Visitors entering Mesa Verde National Park, season 1925*

Transportation company's cars.....	210
Private cars.....	7, 952
Second trips.....	410
Wagon.....	85
Horseback.....	183

Hiking-----	35
Motor cycles-----	5
Miscellaneous-----	163
Total-----	9, 043
Total number of motorists using camp grounds-----	5, 701
Total number of motorists using hotel-----	3, 342
Total number of people entering park in private cars-----	7, 952
Second trips-----	410
Total-----	8, 362

The private motorists were carried in 2,197 automobiles.

#### SERVICE TO THE PUBLIC

Service to the public during the season has been satisfactory in every way. The executor of the estate of the owner of the Mesa Verde Pack & Saddle Co. provided a man to carry on this operation after the owner was removed to a hospital following a serious breakdown. This operation again lost money because of lack of demand.

The Gallup-Mesa Verde stage line, connecting with the main lines of the Santa Fe at Gallup, N. Mex., satisfactorily handled the small patronage that used the road over the Navajo Reservation. The Mesa Verde Transportation Co. rendered excellent service from the Denver & Rio Grande Southern lines at Mancos and likewise has handled the mail contract for the season.

The addition of four new cottages, several floored tents, and general betterments in equipment and service enabled the Spruce Tree Camp operator to meet satisfactorily the demands for this service.

#### DEVELOPMENT OF THE ADMINISTRATIVE HEADQUARTERS

The completion of the first section of the park museum last winter, together with the building of the unmarried rangers' quarters early this spring—the only times when water was available for building purposes—added two fine units to the administrative group at park headquarters. Masonry construction can be accomplished only in the off season, when our meager water supply is not conserved for visitors' needs. These buildings follow the adopted Pueblo Indian style used in the other permanent buildings and are being furnished for the most part in the early Franciscan Mission style, the work being accomplished by the superintendent and his wife and the two permanent rangers during the winter or closed season. The plans and sketches for the buildings are the work of Mrs. Nusbaum.

An employees' mess hall and an employees' bunk house have been added to the industrial group, thereby providing suitable quarters for the feeding and housing of general white help, which was utterly lacking up to this time.

Our Navajo hogans, each a representative of a much-used type on the Navajo Reservation, were erected with great care and much pride by the Navajo Indians employed here as their housing and living units. This unique group forms a unit of great interest to visitors, and the Indian area is most scrupulously cared for by Navajo occupants.

The balance of the construction projects for the year at park headquarters, with the exception of water development, which is covered under a separate head herein, must be done late this fall or early next spring.

#### NEW PARK MUSEUM

The new park museum was opened to visitors early this spring. The large well-lighted exhibit rooms have made it possible properly to display the park archeological collections. The employment of a museum assistant to care for the collections and explain the exhibits has greatly intensified the interest in the museum. Mrs. Nusbaum, during the winter and spring, devoted much time and energy to collecting a large reference library for the museum, dealing particularly with the archeological, ethnological, geological, and historical data of the Southwest in general, and the Mesa Verde in particular. Visitors

have made considerable use of this library during the season. With the exception of five old museum cases and part of the archeological collection, the building, the exhibit cases, the furniture, fixtures, the library, and other furnishings and exhibits are the generous gifts of friends of the Mesa Verde. The space allotted for this report would not be sufficient to acknowledge the gifts and their donors. Enough material is on hand in process of preparation to fill another large room, and this installation will be made during the coming winter. Over 150 varieties of flowers and plants, etc., have been collected and identified, and part only of these have been placed on display in Riker mounts.

#### PUBLIC CAMP GROUNDS

Visitors made use of the public camp grounds during the season and at certain rush periods demonstrated the necessity for enlargement of the camp grounds area before the beginning of the next season.

#### ARCHEOLOGICAL WORK

Funds provided by a park friend enabled the two rangers and myself, with a little outside help, to install flood lights, buy respirators and equipment, and excavate the north refuse space in the back of Spruce Tree House, thereby gaining much scientific knowledge and some valuable material for the museum. This was accomplished under a permit issued by the Secretary of the Interior. Approximately \$800 is still available for further work, which we will try to do this coming winter. Government funds are available only for the repair, preservation, and protection of the ruins, and this work can be done only when water is available.

#### WATER SITUATION DESPERATE

Opportune rains, which replenished the reservoirs at the same time that traffic was held up by muddy roads, alone permitted the park to remain open during the season. A 63,000-gallon tank was hurriedly erected this spring in an effort to store excess water in early spring to care for later periods of drought. The water so gained was used later to increase the daily available supply to meet the demands, a total of 47,000 gallons being available for the months of July and August, to cover all the requirements of visitors and all camp needs. A 20,000-gallon underground cistern was constructed to impound rain and snow water from the roofs of the industrial buildings.

The Subcommittee of the House Appropriations Committee on Interior Department Appropriations, together with the Interior Department representative of the Bureau of the Budget, spent three days here getting first-hand information on the ground and investigating the activities of the park administration. As a result of their investigation of the water situation, they wired the United States Geological Survey to send their best man in the water resources division to make a ground-water survey of the area and submit a report to Chairman Cramton of the committee as to the best method of obtaining an adequate supply. Mr. Meinzer has completed his preliminary work at this time. The members of the committee were unanimous in agreeing that the water situation must be cared for at once.

#### CAMP-FIRE TALKS, VOCAL CONCERTS, AND INDIAN DANCES

Informal camp-fire talks on the archeology, history, geology, flora, and fauna of the park area were given by the superintendent and the two permanent rangers each evening during the summer season at the camp-fire circle. Noted educators, travelers, explorers, writers, and scientists visiting here welcomed the opportunity to add a further word of enlightenment on their particular work to our interested groups. Occasionally famous singers and musicians have favored us by singing or playing in the depths of Spruce Tree Ruin, 600 feet distant and across the canyon from the audience, yet each sound or tone as audible as though but a few feet distant. Six of the best singers and dancers of the Navajo employed here conclude the evening program with three parts of the famous "Yeibachai Ceremony." All visitors attend the camp-fire talks, many night after night.



### "FIRE"

Especial significance is attached to the element of fire in the mythology, the folklore, and the present-day ceremonies of both the Navajo and the Pueblo Indians, and since one ruin on this park was undoubtedly dedicated solely to fire worship, Mrs. Nusbaum conceived the idea of reenacting in Spruce Tree House a sacred fire ceremony, such as probably took place here 8 to 12 centuries ago, basing her story on the scientific background of the Hopi and Navajo fire ceremonies. She wrote the play, designed the costumes, secured the good will of the Navajo medicine men, overcame their prejudices, and trained 40 Navajo men, few of whom speak any English whatever, to their parts. The play was given on July 2 for the congressional group, and again on July 5. Approximately 700 people attended the two performances, some cars making special trips for the performances from over 400 miles distant. The play could not have been a success but for the whole-hearted cooperation of the park personnel and the Navajo Indians. The Denver & Rio Grande Western Railway furnished the flares to illuminate the action. Park friends assisted Mrs. Nusbaum and myself in defraying the expenses of the two plays.

### FLOWERS

Mesa Verde was again blanketed with flowers and blooming shrubbery above the timbered area from early spring till the abnormally warm weather of June and accompanying drought destroyed the wonderful display.

### WILD ANIMALS

Abnormally warm weather during June, and lack of water on the north rim, forced the park deer to the higher mountains, and but few were seen during the season. Two small bears were noted on the park this season for the first time. Coyotes are numerous, likewise bobcats, occasionally a wolf; kit foxes, swifts, ring-tailed cats, porcupines, and badgers are often seen. Wild horses, cattle, and burros are often encountered in patrolling away from camp, and their fear of man is much more pronounced than that of the commonly called wild animals.

### ROADS

Under maintenance funds, the narrow unsurfaced shale, clay, gumbo, and red soil roads of the Mesa Verde have been maintained in most excellent shape except during rainy periods, when the various components of the road surface more resemble soft butter, both as to consistency, and to possible traction. Dozens of cars with chains on all four wheels have been unable to keep their radiators even pointed toward camp in attempting to ascend the Mesa in wet periods, after motoring hundreds of miles to visit this area. Sunshine and complete grading of the road surface to fill the ruts, alone restores the road surface. There have been periods of one to three days when not a car could enter or leave the park, due to steady penetrating rains. Each year conditions grow worse because of the 40 to 50 per cent increase in traffic. The roads must be hard surfaced.

In all, \$100,000 was allotted from the road budget funds for road work this year; \$12,000 for force account work; \$32,000 for grading (new and reconstruction); and \$56,000 for commencement of hard surfacing of existing roads. Not a single bid was received under the graveling proposal. One bid only was submitted on the grading proposal, which was 40 to 100 per cent above our force account cost for similar dirt and rock work under park forces. This was rejected by the Secretary of the Interior, who directed that we undertake the work involved by force account. Approximately 10 miles of the old narrow road was widened to 21 feet, grades, curves, and alignment corrected, and some equipment purchased under the \$12,000 force account allotment.

On September 15, approximately 33 per cent of the work originally to be accomplished under contract had been completed by park forces. Eighty-five per cent of the total force used was composed of Navajo Indians from the Navajo Reservation. The amount allotted for graveling was reallocated another park, as we did not have the equipment to handle the work.

Park traffic is already using the west halves of projects B and C which have been practically completed.

### RUINS

No new ruins of importance have been found during the season. Ruins regularly visited by tourists are maintained in the best of condition when water is available for the periodical repair that is necessary because of the travel through them. Repair work will be inaugurated again when water is available.

### GIFTS

The present season has been characterized, not by the outstanding and substantial contributions of a few as in past seasons, but rather by the very widespread interest, cooperation, and contributions of a great number of park friends. I regret exceedingly that the space allotted for this report does not permit the listing of the individual gifts and their donors.

### PERMITS AND LEASES

One restricted cattle grazing permit was issued covering grazing on lands remote from roads, trails, and ruins. Permits were also issued to cover auto stage transportation from Gallup and from Mancos to the park.

## GLACIER NATIONAL PARK

CHARLES J. KRAEBEL, Superintendent, Belton, Mont.

### TRAVEL

An increase over last year of more than 20 per cent in registered visitors established a record for Glacier National Park. It is interesting to note that nearly all of this increase (5,691) came by rail, while the increase of visitors by private automobiles was 1,012. Entry by horse showed a slight decrease, by launch a slight increase. The great increase of rail travel reflects the fact that this was a strong convention year, and large delegations en route to or from the Pacific coast stopped in the park for one or more days. Some of these, stopping only at Glacier Park Hotel and not passing into the actual boundaries of the park, were not counted. The smallness of the increase in auto travel may be ascribed to the fact that the Montana Legislature failed to vote funds to match Montana's share of Federal-aid funds for road improvement. News of this inhibitory action was carried in newspapers throughout the country, and Montana acquired a reputation for bad roads, which, although undeserved, must have caused hundreds of transcontinental motorists to swing southward and avoid this State. The following table shows the kind and amount of travel to the park during the past year:

#### *Travel by entrances*

Entrance	Private auto-mobile		Private motor-cycle		Saddle horse, team, and foot	Stages	Boats	Totals
	Cars	People	Cars	People				
Belton.....	2,905	9,333	5	8	60	3,156		12,557
Polebridge.....	353	992				19		1,011
Glacier Park.....					37	223		260
Waterton Lake.....					6		930	936
Belly River.....					221			221
St. Mary.....	1,638	5,136			141	11,955		17,232
Two Medicine.....	1,012	2,626	3	6	169			2,801
Sherburne.....	347	1,015			22			1,037
Essex.....						6		6
Paola.....						2		2
Total, season.....	6,255	19,102	8	14	656	15,361	930	36,063
Out of season.....	1,330	4,000						4,000
Total year's travel.....	7,585	23,102	8	14	656	15,361	930	40,063

Visitors this year (Oct. 1, 1924, to Sept. 30, 1925)-----	40, 063
Visitors past year (Oct. 1, 1923, to Sept. 30, 1924)-----	33, 372
Increase this year-----	6, 691
Automobiles this year-----	7, 585
Automobiles last year-----	6, 756
Increase this year-----	829
Visitors by automobile this year-----	23, 102
Visitors by automobile past year-----	22, 090
Increase this year-----	1, 012

## WEATHER

While our weather records are incomplete on account of the unusual demands placed upon our employees during the forest fire situation, the approximate precipitation for the year was 25 inches. The maximum temperature was 98° during July and August, and the minimum temperature was 42° below zero during December. During December we had an unusually heavy snow storm which started on December 14. Later the storm turned to chinook winds and for two or three days this section of the country experienced the strongest winds and the heaviest chinook ever recorded. An enormous amount of timber was blown down throughout the park and heavy slides of snow, earth, and trees blocked all roads and trails, and tore down all telephone lines, making the cost of opening the roads and trails for tourist travel in the spring and repairing our telephone lines extremely heavy.

## ROADS

The outstanding road project in the park is the continuation of the Trans-Mountain highway over the Continental Divide, through Logan Pass. Last winter an agreement was reached whereby the Bureau of Public Roads will furnish engineering supervision for the completion of this project. A conference was held in Spokane in April between the superintendent and the district engineers of the bureau at which we codified an outline of procedure for cooperation between the bureau and the National Park Service in major road location and construction within the national park. At this conference Assistant Landscape Engineer Vint was present and careful consideration was given to fundamental principles of landscape preservation in drawing up the specifications for the transmountain road contract. At this conference also it was decided to concentrate all available road funds for this park on the west side in order to complete the road to the summit of Logan Pass. Another appropriation must be asked of Congress in order to complete the east side section from the pass to the end of the present construction below Sun Camp.

Construction of the St. Mary link of the transmountain road from the outlet of upper St. Mary Lake to a point about 3 miles from Sun Camp was completed during the year.

The Mount Cannon section of the transmountain road after many vicissitudes was completed seven weeks after its due date, a force account crew having been placed upon a portion of the work in order to enable teams to pass over to the new portion being constructed under the Bureau of Public Roads.

The Two Medicine Road was surveyed and contract let early in the summer. Construction on this portion will be completed in time for next travel season. This 6 miles of road is located at an elevation well above the ultimate high-water level of the projected lower Two Medicine Irrigation Reservoir.

The two Federal-aid projects embracing portions of the Blackfeet Highway on Hudson Bay Divide and northward from Babb to the international boundary were under construction during the past season and their completion is expected in time for next travel season.

Persistent efforts have resulted in approval by the bureau of the reconstruction of the remaining portions of this Blackfeet Highway from Glacier Park to Babb from Federal-aid funds allotted to the State of Montana. The survey for this reconstruction is being made by the State highway commissioners, right of way is being secured by the commissioners of Glacier County, and upon completion the maintenance will be done by Glacier Park administration.



Maintenance of our regular road systems on both sides of the park was conducted very satisfactorily in spite of frequent and disastrous rains early in the season.

A contract was recently let for construction of another link on the Roosevelt Highway which is being pushed over the Continental Divide parallel with the railroad along the southern boundary of the park. This is a national forest road built with Federal aid, and although it is outside of Glacier Park its completion is anxiously awaited, both because of its usefulness in administration and because of the additional avenue of approach to the park which it will give to the motoring public.

#### TRAILS

Some additional work was done on the Browns Pass-Kintla Lake Trail to make it passable for travel this season. This connects with the old trail along the Kintla Lakes. Much repair and improvement will have to be done to put this trail in first-class condition for travel.

#### BUILDINGS

The following buildings were authorized in our 1926 appropriation and work on them is in progress: Ranger cabin at Belly River, two snowshoe cabins or patrol cabins in outlying sections of the park, one garage building at headquarters, and an addition to the garage at Glacier Park.

#### HYDROELECTRIC PLANT

During this spring it became necessary to have an experienced hydroelectric engineer inspect this plant. He made certain alterations and improvements in the plant and since that time it has given excellent service.

#### TELEPHONES

A new telephone line was constructed from the Glacier Hotel on Lake McDonald to headquarters, giving direct connections from this hotel to the Great Northern depot at Belton. There has been considerable trouble in the past in transmitting messages between these two points, as all telephone lines were connected together between the hours of 5 p. m. and 8 p. m. and the heavy load on the lines made it almost impossible for the visitors to the park to receive and transmit messages. This new line was connected direct to the depot at nights and excellent service was rendered. Other telephone work consisted in renewing certain sections of our telephone lines that had been destroyed by storms and falling timber by putting in new No. 9 telephone wire in place of No. 12 heretofore used. The No. 9 wire stands a much heavier strain.

#### TOURIST ACCOMMODATIONS AND FACILITIES

The service rendered by the various park operators has been excellent.

A new feature this year was the establishment by the Park Saddle Horse Co. of three permanent tent camps in the northern section of the park. One on the west flank of Mount Kipp, one on Waterton Lake (with Gothaunt Chalet at its center), and one on Crossley Lake. The five-day horse or hiking trip over this circuit proved very popular and the venture is fixed as a permanent feature.

The Park Saddle Horse Co. maintained over 800 saddle horses and gave the public excellent service. The motor transportation company met the difficult task of moving several large convention parties with great efficiency on both sides of the park. A special method of registering these parties used by the National Park Service helped to expedite the heavy movements.

#### NATURE GUIDE SERVICE

The eager use made by the public of our greatly enlarged educational service under Doctor Elrod this season fully justified that enlargement and warned us that this feature is deserving of much further development. An experienced nature guide was stationed at Glacier Hotel on Lake McDonald

and another at Going-to-the-Sun Chalets, in addition to Dr. Elrod's work at Many Glacier. All three of these men maintained in the lobbies of the hotels where they were stationed complete exhibits of living flowers carefully labeled, gave lectures in the evenings, accompanied parties on field trips, and made collections of value for our permanent museum. Doctor Elrod also maintained a fine display of typical rocks and photographs so labeled that they tell with graphic effect the story of the formation of the Rocky Mountains in this park. Living flower exhibits were also maintained at St. Mary, Granite Park, and Sperry Chalets and at the Belton registration station. These exhibits attracted an enormous amount of attention this season, and should be classed among the most important features of our educational program.

### FISH

Glacier National Park is becoming more and more noted as a fisherman's paradise, and consequently there is a heavy toll upon the fish. We had an enthusiastic program for planting 5,000,000 eggs and fry but owing to the shortage of eggs we actually planted only a little more than 2,000,000. Doctor Muttkowski, of the University of Detroit, and one assistant visited Glacier Park during the summer for the purpose of studying the fish food contained in our lakes. His report has not yet been received. During August there was also conducted a fisheries survey in Glacier Park by Doctor Ward, of the University of Illinois, who was a personal representative of the commissioner, Mr. Leach, of Washington, and Superintendent Thompson, of the Bozeman hatcheries. One of the most important things that will be established by these surveys will be information as to the abundance of fish food in the lakes of this park, and it is to be hoped that we may be able to materially increase the output of eggs to permit adequate stocking of the lakes and streams.

### ANIMALS

Reports from the various rangers indicate an increase in all species of wild animals. We expect to continue our count of the larger animals, when an interesting comparison may be made with previous counts.

The following table shows the number of different kinds of game in the park:

Animal	Actual count	Estimated numbers	Animal	Actual count	Estimated numbers
Moose.....	69	88	Sheep.....	724	1, 111
Elk.....	567	706	Goats.....	343	1, 600
Deer:			Bear:		
Mule.....	764	1, 116	Silvertip.....	51	104
Whitetail.....	1, 311	1, 511	Black and brown.....	76	148

### FIRES

There were a total of 15 forest fires in the park during this season. The total cost, while not accurately available at this time, is estimated to be at least \$67,000. This cost may seem excessive, but it is partly due to the fact of our not having proper equipment for fighting fires. Twelve fire-fighting pumps and approximately 30,000 feet of hose were purchased for use on these fires, and gave very effective service. We had one extremely disastrous fire extending from Lake McDonald down the west side of McDonald Creek, around the south slope of the Apgar Mountains, and extending to the top of the ridge. The pumps saved the valuable timber along the Belton-Lake McDonald Road, as well as the entire settlement of Apgar, and kept the fire from spreading to the lake shore, so that the burned-over area is scarcely noticeable to visitors unless called to their attention. The following is a statement of the other fires and the probable causes:

Location	Cause
North Fork of Longfellow Creek on east slope of Anaconda Peak..	Lightning.
Camas Creek Valley, Rogers ranch.....	Do.
East of Snider Ridge, near Sperry.....	Do.
Vicinity of Piegan Pass Trail, Going-to-the-Sun Mountain.....	Do.
Cut Bank Valley, southwest of Chalets, slope of Red Mountain.	Do.
Huckleberry Mountain.....	Do.
South Fork of Belly River, vicinity of Elizabeth Lake and Mt. Merritt and Crossley Ridge Slope.	Do.
East Slope of Heavens Peak, west of Mineral Creek.....	Do.
Two Medicine Road, new right of way, north side, about one-third mile east of park boundary.	
Blackfeet Reservation.....	Some person or persons carelessly dropping lighted match or cigarette. It is assumed that some of the road workers of Brown's Road crew were responsible.
Snow Slip Mountain west of Fielding, Shield Creek.....	Lightning.
Belton Hills, at head of headquarters water system.....	Do.
2 miles above Fish Creek.....	Carelessness of campers.
McGee Hill.....	Lightning.
Howe Lake.....	Do.

### REVENUES

The revenues collected and transmitted to the service during the fiscal year ended June 30, 1925, together with the principal sources, are as follows:

Motor-vehicle permits.....	\$7,742.70
Transportation franchises, hotels, residences, etc.....	7,872.12
Grazing and hay cutting.....	115.50
Timber sales.....	35.15
Telephone rentals.....	248.11
Miscellaneous.....	8.45
Total .....	16,022.03

### ACCIDENTS

Several accidents have occurred in Glacier National Park, and the park administration is greatly concerned over the problem of working out some plan to protect hikers who go through the park without an experienced guide in attendance. One of the principal charms of the park is its wilderness nature, and it is the policy of the National Park Service to prevent overdevelopment of road systems. Here, more than in any other park of the system, is the paradise for hikers over the trails. While the use of the trails to the fullest degree is to be encouraged, the question arises as to whether or not visitors inexperienced in mountain climbing should be permitted to travel through the park without the attendance of a paid guide. During the past winter a means of registering the hikers and checking them from place to place was devised, but it was found that to make this system effective would require more than double the present force of rangers. No practicable check on individual hikers has yet been found.

### RESIGNATION OF ASSISTANT SUPERINTENDENT

The resignation of Assistant Superintendent and Chief Ranger James P. Brooks, became effective on August 31. After a long record of loyal and zealous service both in the Yellowstone and here, Mr. Brooks will enter business life in southern California.

### ROCKY MOUNTAIN NATIONAL PARK

ROGER W. TOLL, Superintendent, Estes Park, Colo.

### ORGANIZATION

The permanent organization of the park consists of the superintendent, chief ranger acting as assistant superintendent, chief clerk and special disbursing agent, clerk-accountant, three permanent rangers, general foreman in



charge of road maintenance work, storehouse clerk, and auto mechanic. In addition, 1 temporary clerk-stenographer, 1 clerk in charge of the information bureau, 1 park naturalist, and 11 temporary rangers were employed during the summer season. An engineer was detailed for duty in this park, in connection with work under the road budget.

#### WEATHER CONDITIONS

The 12 months ending with June were unusually dry, with average temperatures above the normal. This made almost ideal conditions for park visitors, and also enabled road crews to continue their work much later in the fall, and begin much earlier in the spring, than usual. The hottest weather ever noted in the park occurred on July 13-15, when temperatures ranging from 90 to 98° were recorded. The cold weather of the year was practically confined to three weeks, during the latter part of December and the early part of January. The total snowfall at Estes Park last winter was 49 inches, which is less than 45 per cent of the normal snowfall for this section.

#### WILD ANIMALS

Park animals have been in excellent condition most of the time. The largest bands seen at one time were 44 sheep and 80 elk. Several dead animals were found, some of which had met with accidental death, while others had died of old age. There was no evidence of any animals having been shot by hunters.

#### CAMPING

The dry, warm weather which prevailed during most of the summer season was ideal for camping parties, and a larger number than usual took advantage of the camping facilities offered by the two Government camp grounds, located at Glacier Creek and Aspenglen. Caretakers were stationed at these camps during the tourist season, to look after the grounds and enforce the park regulations.

The new camp ground at Aspenglen proved popular with visitors, but much remains to be done, in the way of opening additional camp grounds and improving the facilities of the two now in operation in order to properly care for the camping public.

#### TRAVEL

Travel figures show an increase over last year. One ranger was on duty at each of three gateways from June 14 to September 15, inclusive. All persons passing through the gateways during the hours that the checkers were on duty were counted in order to get the total travel entering the park, and deduction was then made for persons known to have entered the park on several occasions. The balance is reported as visitors, but is probably somewhat larger than the number of individuals because of repeated visits by some of the individuals. No entrance fee is charged at gateways, and it is not desirable to stop cars and register their occupants.

It should be noted that, while the count is made only during 9 hours per day for the 3 months' period, the park roads are open 24 hours a day throughout the year. Also, no count is made on the Longs Peak Road, where there is a heavy travel, nor on numerous foot and horse trails which enter the park at various points. In making up the estimate of total travel, the following items are considered:

1. Actual count at three entrances, nine hours per day, from June 14 to September 15, inclusive.

2. Estimated travel missed at these entrances when checkers were not on duty.

3. Estimated travel from September 16 to June 13, inclusive, when no count was made at gateways.

4. Travel at other entrances not included in the above.

The total travel reported for this park is, therefore, made up partly from actual count and partly from estimates. During the past four years, the total actual count has increased steadily at a rate of about 20 per cent a year. In order that our total travel figures may be conservative and not exaggerated, the estimated portion of the travel has been reduced each year until at the present time it is certain that a greater number of people cross the park

boundaries in a year than the total travel figures reported. As above stated, we have no means of knowing the number of individuals who visit the park in a year. The relation between actual count and total estimated visitors reported during the past four years is as follows:

*Visitors reported during the past four years*

	Actual count, total travel, 3 gates, 9 hours per day, 3 months	Total estimated visitors, as reported
1922.....	108, 472	219, 164
1923.....	125, 513	218, 000
1924.....	150, 621	224, 211
1925.....	198, 127	233, 912

*Estimated travel for 1925*

	Total travel		Visitors	
	Cars	People	Cars	People
Actual count at 3 principal gateways:				
June 14-30, inclusive.....	7, 524	25, 220	5, 716	22, 073
July.....	22, 085	75, 917	15, 881	62, 736
August.....	22, 052	79, 859	14, 225	60, 958
September 1-15, inclusive.....	5, 302	17, 131	3, 716	13, 763
Total actual count.....	56, 963	198, 127	39, 538	159, 530
Estimated:				
Missed by checkers at these entrances during same period, 25 per cent.....			9, 884	39, 882
Travel at these entrances during months of year not counted:				
October, 1924.....	625	2, 500	8, 625	34, 500
November, 1924.....	375	1, 500		
December, 1924.....	125	500		
January, 1925.....	500	2, 000		
February, 1925.....	375	1, 500		
March, 1925.....	500	2, 000		
April, 1925.....	625	2, 500		
May, 1925.....	1, 500	6, 000		
June 1-13, inclusive.....	2, 500	10, 000		
September 16-30, inclusive.....	1, 500	6, 000		
Total estimated visitors.....			58, 057	233, 912

NOTE.—Travel at other entrances of the park is not included in this estimate.

The actual count by type of travel is as follows:

	Total travel		Visitors	
	Cars	People	Cars	People
Private cars:				
General.....	32, 648	118, 747	32, 648	118, 747
Camping.....	6, 778	22, 673	6, 778	22, 673
Repeaters.....	12, 434	34, 216		
Rocky Mountain Parks Transportation Co. cars.....	1, 554	10, 542		10, 542
Hotel cars.....	687	2, 138		2, 138
Rent cars.....	120	523		523
Trucks.....	2, 630	4, 381		
Motor cycles.....	112	183	112	183
Horseback.....		3, 838		3, 838
Pedestrians.....		886		886
Total.....	56, 963	198, 127	39, 538	159, 530

The actual count by automobile entrances is as follows:

	Total Travel		Visitors	
	Cars	People	Cars	People
Beaver Point.....	30, 753	102, 080	17, 034	70, 371
Grand Lake.....	6, 764	22, 723	16, 899	19, 302
Fall River.....	19, 446	73, 324	5, 605	69, 857
Total.....	56, 963	198, 127	39, 538	159, 530

One-third of the private cars entering the park came from States other than Colorado. The proportion of visitors from outside Colorado is even larger than this, since many Colorado cars carry passengers from other States, and the passengers carried by the Rocky Mountain Parks Transportation Co. are largely from States outside of Colorado.

The Fall River Road runs about 37 miles through the park, and is the principal scenic road. The best method of approximating through travel over this road is to take the sum of the inbound and outbound travel through the Grand Lake entrance. The travel count through this entrance is as follows:

	Total travel		Visitors	
	Cars	People	Cars	People
Inbound travel, Grand Lake entrance.....	6, 739	22, 825	5, 605	19, 302
Outbound travel, Grand Lake entrance.....	6, 071	23, 126	5, 346	22, 183
Total.....	12, 810	45, 951	10, 951	41, 485

#### TRANSPORTATION

The transportation franchise in this park is held by the Rocky Mountain Parks Transportation Co. Their equipment includes eighty 11-passenger busses and twelve 7-passenger touring cars. The approximate number of passengers carried by this company on various trips in the park, during the season, was as follows:

Over Fall River Road, between Estes Park and Grand Lake.....	6, 630
Fall River Pass and Highdrive Loop.....	2, 050
Loop service to hotels.....	2, 170
Special service, other than scheduled trips.....	1, 600

Total passengers carried in the park..... 12, 450

The transportation company handled 158 organized tours into the park, with an aggregate of 4,135 passengers.

#### INFORMATION SERVICE

The information bureau, located in the administration building, gave out literature and general information on hotels, cottages, guides, camp grounds, roads, trails, trips of interest, fishing, and natural history subjects. A total of 2,236 persons were registered at this office during the past year.

The following publications relating to this and other national parks were sold during the year:

Topographic map of the Rocky Mountain National Park.....	276
Toll's Mountaineering in the Rocky Mountain National Park.....	126
Lee's Geologic Story of the Rocky Mountain National Park.....	143
National Parks, portfolio.....	31
Glimpses of Our National Parks.....	10
Panoramic View of the Rocky Mountain National Park.....	2

Many thousands of park booklets, folders, maps, and other printed material were distributed through this office.



## EDUCATIONAL AND NATURAL HISTORY WORK

The nature study and guide service, which was inaugurated in this park two years ago, was continued this season, under Mr. P. A. Smoll, of Colorado Springs. Evening lectures, illustrated with colored lantern slides and material from the field, were delivered at the principal hotels, and before various organizations. These lectures were supplemented by field trips, on which the natural life and the geology of the park were studied first hand. Several all day trips were taken to the top of Fall River Pass, which gave an opportunity to observe animal, bird, and plant life at various altitudes. Two talks were given under the auspices of the Colorado Mountain Club over KOA broadcasting station, Denver, by the superintendent and the park naturalist. Our educational and natural history work is growing in usefulness and popularity each year. The need is felt for a museum building, where the educational work of the park may be centered, where the interest of the public may be aroused in the wealth of material available in the park, and where conservation and the study of natural history may be promoted.

## SNOW REMOVAL ON FALL RIVER ROAD

As an experiment in snow removal, 13 boxes of dynamite, weighing 50 pounds each, were placed last fall at the location of the heaviest snowdrift east of Fall River Pass. These boxes were connected by a special type of hollow lead fuse, filled with T. N. T., which would explode them all simultaneously. This dynamite, when it was exploded on June 1, blew out a trench about 300 feet long, 15 feet wide, and 6 feet deep. About 1,000 cubic yards of snow were removed in this way. This is the most satisfactory method of using explosives in snow removal that we have tried. A steam shovel, purchased in connection with the road work in the park, was also used on snow removal, in addition to the use of teams and hand shoveling work. The road was opened to travel on June 13, which is the earliest date at which this has ever been accomplished. The maximum depth of snow through which the road was cut was 18 feet.

## ROADS

The usual maintenance and repair work was done on all roads in the park.

The Fall River Road was straightened, by blasting out rocky points, at several narrow, dangerous places. A parking space was constructed at Chasm Falls, so that visitors may examine this scenic feature without blocking traffic. Water brakes were built at several places, where sudden freshets, pouring their water down gulches, carry the danger of washing out portions of the road.

Two sharp switchback curves on the Bear Lake Road were widened, and a parking space was constructed at the lake, to take care of the increased travel at that point.

The road up Moraine Park Hill was widened, so as to permit the passing of vehicles at every point, and the grade was reduced in several places. A dangerous curve near Griffith's sawmill was widened. The upper portion of the Moraine Park Road is now being improved, under appropriation in the road budget.

A road was cleared, graded, and graveled from the Fall River Road into the Endovalley camp ground.

A branch road was constructed from the Fall River Road, at the fish hatchery, to Aspenglen camp ground, and an 8-foot masonry arch culvert was built, to carry the roadway across Bighorn Creek.

## BRIDGE CONSTRUCTION

A masonry bridge, of attractive appearance, was constructed across Fall River, at the fish hatchery. This bridge takes the place of the old log stringer bridge, which had proven inadequate to carry the high water flow. The new structure has a clear waterway, 24 feet wide by 8 feet high. The abutments, wing walls, and guard rails are of masonry. Seven steel I-beams, 20 inches in height, are used to carry a reinforced concrete slab floor. Ten inches of road surfacing lies above the concrete slab. This is the first bridge of a permanent type to be constructed in this park.

## TRAILS

Longs Peak Trail, from timberline to the Boulder Field, was relocated, in order to put the trail on an easier grade, and in a more scenic location. The upper part of this trail was extended half a mile, to the center of the Boulder Field. Hitching racks for horses were installed at that point. The eastern side of the Flattop Trail was relocated on a better grade. The usual maintenance work was done on all park trails.

## TELEPHONE LINES

The telephone line to the shelter cabin on Longs Peak Trail was reconstructed and the line was extended to the new terminus of the trail, in the center of the Boulder Field. Emergency telephones were installed at the shelter cabin and on the Boulder Field. The telephone line from Wind River junction to Glacier Creek camp ground was relocated, and the line was extended to Bear Lake ranger station. The Fall River line and the line to the fire lookout station, on the summit of Twin Sisters Mountain, were put in first-class condition.

## BUILDING

A log mess house, 18 by 35 feet, was completed at Willow Park, on the Fall River Road, 14½ miles from Estes Park, for the accommodation of men working on snow removal and road maintenance in that vicinity.

A stone bunk and mess house is under construction on the Fall River Road at a point above timber line.

A horse barn and hay loft, 22 by 60 feet, was built at the utility site.

A bunk house and a mess house were constructed on the utility site for the accommodation of road crews working in that vicinity.

A neat dwelling house, 18 by 30 feet, was constructed on the utility site.

A portable office building and temporary quarters for the resident engineer were constructed on the utility site for use in connection with the work under the road budget.

Additions and improvements were made to the residences of the superintendent and of the chief ranger.

## IMPROVEMENTS AT ADMINISTRATION SITE

A masonry wall was constructed in front of the administration building in Estes Park and the street in front of the building was graded and widened to provide adequate parking space for automobiles. The town of Estes Park cooperated with us in the work on the street.

## TWIN SISTERS FIRE LOOKOUT

The National Park Service took over the operation of the fire lookout station on Twin Sisters Mountain, which has been maintained for a number of years by the Forest Service. This station has been of much value to the National Park Service in past years in the detection and reporting of forest fires. Several fires were reported during the summer, but in each case the fire was extinguished before serious damage was done.

## WATER SUPPLY

Preliminary work was done toward a water supply for the utility site. A right of way for a spring and pipe line was secured from Mr. Peter Hondius. A concrete cut-off dam, about 5 feet high and 20 feet long, was constructed across the channel of Buck Creek at a point above the Highdrive. A line of 1-inch pipe was run to the Pineledge camp ground, where a tank was installed. The pipe line was extended from this point to the utility site, and now furnishes a safe water supply to the buildings at that point.

## WINTER SPORTS

A ski course was constructed at Deer Ridge, with the cooperation of the local ski club, and this, together with the course near Estes Park village, was used

in the various winter sports events last winter. Due to the open winter and scarcity of snow, the winter sports were somewhat curtailed, although the park attendance showed decided increases. The Colorado Mountain Club held its annual winter outing at Fern Lake.

#### SURVEYS

Last fall the Bureau of Public Roads surveyed the road from Raymonds, on the South St. Vrain Road, through Allens Park and the Longs Peak district, thence down Aspen Brook and Wind River to Estes Park. The 3 miles of road in the Longs Peak district will require reconstruction in new locations for most of the distance.

Surveyors from the General Land Office were at work during the summer, resurveying townships 4 and 5, North, in Range 73 West. This work was undertaken at the request of the National Park Service. The resurvey will not only reestablish the outside boundaries of the park, but will facilitate the correct location of the line between Government and private property within these townships.

A crew of men under Mr. George A. Gregory, assistant engineer, were engaged all summer in surveying roads and road locations in the park, preliminary to the letting of construction contracts under the road budget.

#### PURCHASE OF EQUIPMENT

A  $\frac{3}{4}$ -yard steam shovel was purchased for the road-construction program. A special snow dipper, with a capacity of  $1\frac{1}{2}$  yards, was also purchased for use in connection with snow removal.

A rock crusher was purchased and installed at the rock slide at the upper end of Horseshoe Park. This will be used to supply surfacing for the eastern side of the Fall River Road.

A portable pump and gasoline engine were purchased for use in fighting forest fires. This pump was mounted on a light trailer, together with 2,000 feet of hose and a supply of tools, and is kept available for immediate use.

Several trucks were acquired from war surplus and through purchase.

#### FISH PLANTING

Over 1,000,000 trout were planted in the streams and lakes of the park during the past year. Most of the eggs were furnished by the State game and fish commission, though 50,000 rainbow eggs and 750 rainbow yearlings were received from the United States Bureau of Fisheries. The eggs were hatched in the Estes Park hatchery, which is operated by the State of Colorado, and the fish were planted by the Estes Park Fish and Game Association, the National Park Service cooperating.

The State game and fish commission also supplied some salt-water salmon eggs from a hatchery in Oregon. Sixty thousand of these fry were placed in Emerald Lake, which is landlocked. This is the first planting of salmon in this park, and the experiment will be watched with interest.

Lake Mills was stocked with 50,000 rainbow trout, with the expectation of making it a station for the collection of eggs.

Following is a summary of fish planting during the year: Eastern brook, 250,000; native, 730,000; rainbow, 150,000; rainbow yearlings, 750; salmon, 60,000; total, 1,190,750.

At the present time there are some 780,000 native trout fry in the Estes Park hatchery; 180,000 of these were received from the Bureau of Fisheries. These fry will be planted later this fall.

#### ARRESTS

One arrest was made on the charge of carrying concealed firearms in the park, and of breaking into private cottages. The defendant pleaded guilty of grand larceny before the county court, in Fort Collins, and was given a sentence of three to five years in the State penitentiary. The charge of carrying concealed weapons was not pressed.

In the only other arrest made the defendant was charged before the local justice of the peace with leaving a burning camp fire. He was fined \$25 and costs.



## VISIT OF APPROPRIATIONS COMMITTEE

The congressional subcommittee on Interior Department appropriations visited the park July 7-9, inspected the work being done on roads and other improvements, and looked over the plans for proposed work.

## NEEDS OF THE PARK

A program has been prepared, covering the proposed development of the park for a period of five years. This program covers in detail roads, trails, buildings, camp grounds, and all other recommended improvement work.

## HAWAII NATIONAL PARK

THOMAS BOLES, Superintendent, Volcano House, Hawaii

As Kilauea Volcano is the object of nearly all visitors the modest appropriation was devoted to improving and protecting the Kilauea section of the Hawaii National Park. All roads and trails are in good shape, and all points of interest properly signed. Four public toilets and two shelter houses with water tanks were provided during the season.

## KILAUEA MILITARY CAMP

The War Department maintains a recreating camp in the park, at which nearly 4,000 officers and men spent their vacations last year. Their grounds have been greatly improved by landscaping and the erection of additional rustic cabins for officers.

## NAVY RECREATION CAMP

Noting the benefit obtained by the Army, the Navy Department has subleased 14 acres from the Army camp, and has started the erection of buildings to be used by officers and men from Pearl Harbor.

## PUBLIC CAMP SITE

The public camp site in the Ohia Forest, convenient to all park trails, was well patronized by picnickers during the season. Cooking grates and drinking water are provided by the Government.

## HOTEL ACCOMMODATIONS

Kilauea Volcano House, starting on its present site in 1865 as a grass hut, has developed into a modern hotel of 120 rooms, including several cottages; and has been filled beyond capacity at several times during this season. It is located on the steaming cliffs facing Kilauea Crater and within easy walking distance of all points of interest. The invigorating climate encourages the guest to remain longer and hike the trails or try the nine-hole golf course near by, with earthquake cracks and tree molds for natural hazards.

## SUMMER CAMP

Although holding a permit, the hotel directors have been dubious about erecting their summer camp until molten lava actually reappears in the volcano. However, a very low weekly and monthly rate has been authorized at the volcano house.

## VOLCANO OBSERVATORY

This scientific institution, supported by the Geological Survey of the Interior Department, with aid from private sources, continued its work of observing the various phases of the volcano, and recording seismic disturbances.

## VOLCANIC ACTIVITY

In contrast to the stupendous spectacle afforded by the explosive eruptions of the previous season, taken as a whole Kilauea Volcano has during the past

season assumed the solemn and impressive attitude of the Grand Canyon. At several times during the past season, however, the spectators have been thrilled by rumbling avalanches which sent clouds of rock dust thousands of feet into the air. During the early part of the year each morning an enormous steam cloud would slowly rise from the crater, which, when illuminated by the colorful rays of the rising sun, or by the ghostly beams of the tropical moon, convinced the onlooker that Kilauea can be magnificent even in repose.

Mauna Loa Volcano continues inactive, except for the small wisps of fume in the summit crater; but the hundreds of earthquakes during the past season indicate that enormous adjustments are taking place far beneath the two mountains, which some day may become visibly evident by the return of molten lava.

#### NATIVE CEREMONY

On March 21, over 2,000 persons, mostly natives, assembled at the rim of the crater to watch and encourage four venerable kahunas (witch doctors) in their efforts by prayers and offerings to induce the molten lava to return to the pit; the presence of lava indicates that explosions or severe earthquakes are not likely.

#### ROAD WORK

Devoting the first allotment of road funds to widening and making safe the road to the volcano proved an excellent decision; this eliminated 90 per cent of the accident hazards on this road, and during the visit of the fleet the large crowds were easily handled and without accident. In fact this park has been free from accident during the entire season. In addition to the safety work on this road, many complimentary expressions were received on the success in preserving the tropical vegetation along the roadside.

Surveys through the cooperation of the Bureau of Public Roads, have been completed for the Chain of Craters Road. Surveys for the Mauna Loa Road are in progress.

#### VISIT BY THE NAVY

The outstanding event of the past season was the visit of the officers and men from the United States Fleet, following their Hawaiian maneuvers. When Admiral Coontz visited here last October he was so impressed he stated that every man of the fleet would be given the opportunity of visiting the park. The Hilo Chamber of Commerce added much to their visit to this island by handling many of the details; and a very low taxi rate to the park enabled most of the men to make the trip to the volcano. On June 10 alone there were 1,800 sailors in the park, and on several days there were as high as 1,500 present. While the 200 ships were at Lahina many of the men climbed Haleakala. Admiral Coontz furnished ample shore patrol from the ships which enabled the handling of the crowds with comparatively little expense to the Interior Department. Patrol officers and men reported to the superintendent for assignment of duties. During the entire visit of the men of this fleet to the park their conduct was a credit to the department which they represent.

#### CONGRESSIONAL VISITORS

Among the many visitors to Hawaii National Park during the past season were a number of congressional visitors, who were attracted to the islands by the Navy maneuvers. Congressmen Cramton and Taylor devoted several days to the park, covering 80 miles on horseback, and taking great pains in making personal inspection of our proposed road projects. Governor Farrington accompanied them on their trip. All the visitors expressed surprise not only at the attendance records but at the wealth of interesting features.

#### VISIT BY JAPANESE SQUADRON

During November a squadron of the Imperial Japanese Navy called at Hilo, and their entire personnel of 2,500 men, including 600 naval cadets, visited the park. Local Japanese were used as guides during this visit. Vice Admiral Hyakutake and staff were most appreciative of the treatment they received.



## TRAVEL DURING 1925

Travel to the Hawaiian Islands is increasing, not only from the rest of the United States but also from foreign countries. The Matson Line and the Los Angeles Line steamships are frequently loaded to capacity. Within one year the concrete highway from Hilo will be within 5 miles of the park entrance, and during the following year should reach the gate. This promotes local travel and also benefits the tourist business. Travel to the park is fairly well distributed, which enables the Interior Department to administer this park with a comparatively small force. The total travel for the season was 64,155; that for last season, 52,210.

## PUBLICITY

We have been favored with excellent publicity, not only through our visitors but through the cooperation of Hilo and Honolulu newspapers. The Territory of Hawaii, through the Hawaii Tourist Bureau, is spending \$100,000 per year advertising the islands. The bureau has always included liberal mention of the Hawaii National Park, and, in addition to the regular literature, has issued 100,000 Hawaii National Park folders and distributed them throughout the world. A special movie film of Hawaii, in which park features have been given proper space, has been prepared by the tourist bureau, and some 20 copies of this film are now being displayed on the mainland.

## LASSEN VOLCANIC NATIONAL PARK, CALIF.

L. W. COLLINS, Chief Ranger, Mineral, Calif.

The appropriation of \$10,000 for Lassen Volcanic National Park for the fiscal year 1926, together with the \$91,675 allotted for road-construction work under the general road budget, made possible the taking over of the active administration of the park by the National Park Service, and the inauguration of development work. A total of 12,596 people visited the park.

## IMPROVEMENTS

During the summer a ranger cabin and barn were constructed on locations approved by the assistant landscape engineer. This officer also approved road locations, and selected sites for several buildings planned for next year.

The civil engineering division completed the final location and construction survey of about 16 miles of road, and late in July two contracts were let covering the construction of about 3 miles of the southwest entrance road and about 6 miles of the northwest entrance road. The final location of other roads is now being made by the service engineers.

The boundary of the park has been marked with small metal signs, placed on trees at regular intervals of an eighth of a mile.

Considerable work was done on the trails during the summer, cleaning them out and smoothing them up generally. Owing to the lack of funds it has been impracticable to maintain them properly, and they had become very rough in places.

## FOREST SERVICE COOPERATION

The Forest Service has maintained two lookout stations within the confines of the park which has greatly assisted in fire-patrol work. While a few fires were caused by lightning, there were no serious fires within the park area.

## PARK ENLARGEMENT DESIRABLE

One of the urgent needs of this park is the addition of land on the southwest, including the most suitable building site for the establishment of park headquarters. The topographic map now being prepared by the Geological Survey engineers covers this land which should be added to the park.

## WILD ANIMALS

Deer and smaller game abound within the confines of the park, and occasionally black and brown bear are seen. To protect the park animals properly grazing of cattle should be limited, if not entirely eliminated.



## MOUNT MCKINLEY NATIONAL PARK, ALASKA

HENRY P. KARSTENS, Superintendent, McKinley Park, Alaska.

New park headquarters have been established 2 miles from McKinley Park station, on the new park road, at which point buildings are being constructed by the park force. During August, 1925, a clerk was employed, relieving the superintendent of office routine and enabling him to devote more time to protection and promotion of the park.

### ROADS AND TRAILS

Road construction in the park is being done by the Alaska Road Commission. At the opening of the park season, 10 miles of road were graded, allowing auto transportation between McKinley Park station and Savage Camp. During the summer Savage River Bridge was completed and 9 miles of additional road was graded, but this is not yet in condition for auto travel. In all, 22 miles of road are expected to be graded by the end of the working season, including the bridge over the Sanctuary River. No work has been done on trails this season.

### DESTRUCTION OF GAME

The eastern portion of the park has been well protected and only occasional evidence of illegal hunting has been observed. Three persons were apprehended for illegal killing of game but were not prosecuted as there were doubts of their illegal intent. The result of protection in this section is very evident in the comparative tameness of the park animals. Visitors have approached to within 200 feet of large bands of sheep and also within 50 feet of a family of fox in their wild state. These conditions exist in a section that has been thoroughly hunted and trapped in the past. The amount of wild animals seen by the visitors was very gratifying.

The park personnel is too small for extensive patrol. In the central and western portions of the park, evidence of considerable slaughter of caribou and sheep has been observed. During February, hunting camps were found on the east and west forks of the Toklat River, near the northern boundary. These camps were littered with hides, bones, and offal of sheep and caribou. Where the hunters' dogs were tied, piles of bones were in evidence and enough meat on them to feed the ranger's dogteam for several days. Well beaten trails were observed, running from the camps to the northern boundary, giving evidence of considerable travel. Inquiry was made of the people living north of the park with no results. Reports are received of considerable game being killed for dog's feed in the central and western portion of the park.

### TRANSPORTATION

Since the grading this spring of the new road to Savage River, a distance of 12 miles, autos have been operating between McKinley Park Station and Savage Camp. Four touring cars have been in operation all season, replacing the more expensive and slower transportation by horses.

At times during the latter end of the season, travel was so heavy that the four cars were crowded in handling all who wished to go into the park.

At Savage Camp a pack and saddle train was maintained for those who wished to penetrate into the park beyond that point. A small camp was also maintained at Igloo Creek, 18 miles beyond Savage River and a rest-house tent was also maintained at the head of Savage River, which offered the visitor to that section a comfortable place to rest. This resthouse was put up by the transportation company and no charges were made.

### VISITORS

The increase of travel into the park is very gratifying. A total of 206 persons entered the park in comparison to 62 in 1924, an increase of over 227 per cent. The comfort and lower costs by auto travel, in comparison to horse transportation, is the principal reason for this increase.

All visitors who entered the park were well pleased with their trip, the transportation and camp service were very good, wild animals were very much

in evidence, and Mount McKinley loomed up in all its glory during the major portion of the season. In all cases, the one regret was that the auto road did not continue on to the more distant portions of the park.

#### FOREST FIRES

There has been only one small fire in the park this season—this between mile 3 and 4 on the park road. The superintendent and clerk, with an auto truck and barrels of water, put it out in a short time. Only one tree was destroyed. The fire was started by a camp fire which was not properly extinguished.

#### TELEPHONE LINES

The telephone line of duplex rubber covered copper wire which was laid from McKinley Park station to Savage River last year has been extended to Sanctuary River, making in all 22 miles of line. Also a telephone line composed of metallic circuit No. 9 copper wire has been built from McKinley Park station to new park headquarters, connecting with the Alaska Railroad lines and giving access by phone as far north as Fairbanks and as far south as Seward.

#### MINING AND PROSPECTING

Prospecting in the eastern portion of the park has been almost abandoned. Aside from the silver-lead lode as yet of unknown value, found at Copper Mountain, no important mineral deposits have been discovered.

### GRAND CANYON NATIONAL PARK

J. R. EAKIN, Superintendent, Grand Canyon, Ariz.

#### TRAVEL

Visitors from every State in the Union, Alaska, Hawaii, the Phillipines, Porto Rico, and 30 foreign countries gave Grand Canyon National Park the greatest travel year in its history. The total number of visitors was 134,053 as against 108,256 visitors in 1924, an increase of 23.8 per cent. During the month of August, autos from every State in the Union, Canada, Mexico, and Hawaii were registered.

The increase of travel to the north rim was 110 per cent over 1924, and is particularly gratifying. Facilities there must be enlarged and bettered to meet our responsibilities.

For the first time since the creation of the park, auto travel exceeded that by rail for several months, which it is believed is a forerunner of conditions that will prevail in the future. The number of auto campers also greatly increased, and the camp grounds used at present were taxed to capacity.

Travel to Grand Canyon National Park for the travel season ended September 30, 1925, was as follows:

By automobile				By rail		Miscellaneous		Total
South rim		North rim		South rim	North rim	South rim	North rim	
Cars	Passengers	Cars	Passengers					
17,814	57,427	2,096	7,114	68,267	994	103	148	134,053

#### REVENUE FROM PERMITS, CONTRACTS, ETC.

Permits for studio, curio shop, grazing, etc----- \$550  
 Contracts for hotels, camps, transportation, general store, estimated---- 15,000

#### WEATHER

Contrary to general impression the Grand Canyon does not have a torrid or desert climate. The altitude being nearly 7,000 feet, combined with a southerly



latitude, makes climatic conditions nearly ideal, and the light, dry atmosphere renders the sensible temperature much less extreme than the instrument record indicates. The highest temperature during the year was 98° above in July, and the lowest 9° below once in December and again in January. The temperature seldom touches either extreme, there being cool summer weather in summer, and mild winter weather in winter.

#### ACCOMMODATIONS AND FACILITIES FOR VISITORS

On the south rim and in the canyon tourists are accommodated at hotels and camps operated by Fred Harvey. El Tovar and Bright Angel cottages on the south rim gave excellent service to visitors, and those taking overnight trips into the canyon found Hermit Creek cabins and Phantom ranch up to the standard set by the Harvey Co.

On the north rim the Wylie Way camp, operated by Mrs. Elizabeth McKee, provided excellent accommodations for visitors.

#### ROADS

All chuck holes were patched up on the paved road to Hermit's Rest. This road should be widened and an oil mat applied over its entire length. Dirt roads to Grand View and Desert View and that part of the approach road within the park were maintained as well as weather conditions permitted. A severe cloudburst washed out 3½ miles of the road between Grand View and Desert View and for several days it was not traveled.

The Bureau of Public Roads completed surveys and estimates for the following roads on the south rim: Administrative headquarters to Desert View; administrative headquarters to Supai, Yavapai Point, and Yaki Point spurs; Pasture Wash to Bass Camp, and that part of the approach road within the park. On the north rim the Bureau of Public Roads completed surveys and estimates for the following roads: Approach road from Little Park to Bright Angel Point, and from Little Park to Cape Royal.

The Yavapai Point spur was completed, and excellent progress is being made on the Yaki Point spur and administrative headquarters—Grandview section of the Desert View Road. This is being done by force account under the supervision of a resident engineer detailed by the Bureau of Public Roads. Landscape principles are being carefully followed, and the work is being done as economically as it could be done by contract. Accurate cost figures are being kept in order that the fairness of future bids for road construction may be determined. In the event bids are excessive the park now has sufficient equipment to build any road by force account. With this equipment it will be possible adequately to maintain our roads at a minimum cost.

On the north rim a crude road was constructed to Swamp Ridge Point, which overlooks Muave Saddle. The country traversed by this road is our greatest forest fire risk, and fighting forest fires will be greatly facilitated. On the south rim a crude road from Desert View to Cape Solitude was begun, and will be completed next year.

#### TRAILS

Despite unusually heavy rains in August and early in September, trails were maintained in better condition than ever before. The Kaibab Bridge was redecked and new guard rails were installed.

The Yaki Point section of the Kaibab Trail was completed June 15 and was dedicated by Congressmen Cramton, Leavitt, Murphy, and Hayden. Entirely new standards were used in its construction. Some widely traveled visitors have pronounced it the best trail in the world.

The trail through the Granite Gorge of Bright Angel Creek was rebuilt for a distance of 2.5 miles and over 40 creek crossings were eliminated. There remains only 1.25 miles in the gorge to be rebuilt and it is hoped to complete it this winter.

Much favorable comment has been created by the new footpath to Yavapai Point now nearing completion. Funds are available for a footpath to Hopi Point which will be constructed on the same standards.

The trail from Swamp Ridge Point across Muave Saddle to Powell Plateau was rebuilt in order to facilitate fighting forest fires. Powell Plateau is unusually susceptible to lightning-caused forest fires.



## COMPREHENSIVE SEWAGE DISPOSAL PLANT

Excellent progress is being made on the comprehensive sewage disposal plant authorized at the last session of Congress. The greater part of material is on the ground and it is believed that the project can be completed within the appropriation. It was feared that good sites for the treatment tank and for disposal of waste from effluent could not be found but after running many lines of levels remarkably ideal sites have been found which insure proper operation for all time to come.

## GARBAGE INCINERATOR

Experiments by sanitary engineers of the Public Health Service to develop a satisfactory type of garbage incinerator having been successful, the construction of one will soon be under way. Sanitation in Grand Canyon National Park will soon be on a par with other national parks.

## SANITATION OF INDIAN GARDENS

During the latter part of August, H. B. Hommon, sanitary engineer of the Public Health Service, inspected sanitary arrangements at Indian Gardens and pronounced them satisfactory. Chemical toilets were installed and old pit toilets treated with quick lime and covered with earth. Thousands of tin cans and much debris left by former occupants engaged in mining were removed. The trail was taken out of the creek and water troughs for animals installed. The grounds now present a neat appearance. Recent analysis of the water shows it to be free of B. Coli and safe for drinking purposes.

## TELEPHONE LINES

The north rim line was thoroughly worked over and other lines adequately maintained. The line from headquarters to Pasture Wash Ranger Station was completed and the line to Desert View is under construction. The Indian Service constructed a line from Pasture Wash to Supai and there is now telephone connection from Grand Canyon village to the Havasupai Indian Reservation.

## BUILDINGS

On the south rim, two machine sheds were constructed in the industrial area. Ranger cabins and barns were built at Pasture Wash and near Desert View. Ample water was developed for occupants of these cabins by cisterns and catchment basins.

On the north rim, a ranger cabin, barn, warehouse, and machinery shed were constructed.

## FREE WATER FURNISHED TO CAMPERS

In line with the service's policy of maintaining necessary conveniences for auto campers, free water was furnished on camp grounds beginning July 1. Water, hauled in tank cars to the canyon, a distance of 125 miles, is purchased by the service at cost. It is believed this service contributes more to the comfort and convenience of visitors than the expenditure of many times the amount involved along any other line.

## RECREATION FIELD

The large permanent population at the canyon made it imperative that a recreational field be established, where baseball, tennis, and other sports might be enjoyed. Accordingly, a site south of the residence area and away from all tourist activities was designated. The field was prepared by donated labor and without expense to the Government.

## IMPORTANT SCIENTIFIC DISCOVERY

The discovery of a series of eight different prehistoric animal tracks in the Coconino Sandstone, along the Hermit Trail, is considered one of the most important scientific discoveries of last year. There exists a great field for

a museum at Grand Canyon and it is hoped funds soon will be found for this purpose.

#### FISH CULTURE

Rainbow trout are now firmly established in Bright Angel Creek. The stream was thrown open to fishing this year and some fine specimens taken. A plant of 50,000 trout in both Bright Angel and Shinumo Creeks was made this year.

#### WILD LIFE

There has been a gratifying increase of wild life on the south rim. Rangers have observed herds of deer numbering as many as 15. Mountain sheep are frequently seen by trail parties.

On the north rim, the Kaibab deer did not suffer the great loss last winter that was predicted. This being a normally wet year, the deer are in splendid condition. The experiment to reduce the number of deer by catching fawns for shipment elsewhere has proven a success. There was a considerable loss in fawns after capture, but this is to be expected for a year or two, as the experiment of raising fawns in large numbers has never been tried before.

Twelve fawn antelope were placed on the Tonto Plateau in cooperation with the Biological Survey. One was so badly injured in being packed into the canyon that it had to be destroyed. Two more have died from causes unknown. The remainder appear to be doing well. Within one year it will be known whether or not the experiment is a success.

Predatory animal hunters and rangers have destroyed 59 coyotes, 34 bob cats, 1 lynx, 1 wolf, and 11 house cats. An intensive campaign against coyotes is to be waged on the north rim this fall.

#### FOREST FIRES

Of 21 forest fires, 15 were caused by electrical storms, 5 by forest infestation work getting out of control due to high winds, and 1 by carelessness of campers. One fire burned an area of 85 acres, another 30 acres, another 12 acres, another 10 acres, and the rest were negligible.

#### PUBLIC CAMP GROUNDS

Three public camp grounds were maintained during the year, but the one at headquarters was patronized to a greater extent than the other two, located at Grandview and Desert View. All camp grounds were kept in clean and sanitary condition and new toilets installed. A generous supply of firewood was always available to campers, and beginning July 1, free water was furnished to campers.

Work on the new camp grounds is progressing satisfactorily.

#### DEPARTMENT OF AGRICULTURE—FOREST SERVICE

During the past season especially cordial relations have existed between Grand Canyon National Park and the Tusayan and Kaibab National Forests in Coconino County. Park employees spotted a number of fires in both these forests and reported them to the supervisor's office before they had been located by Forest Service men. The Forest Service also spotted several fires on the park.

#### DEPARTMENT OF AGRICULTURE—BUREAU OF ENTOMOLOGY

The National Park Service vigorously combated the forest insect infestation on the north rim, and it is believed this infestation has been practically eliminated. The work was done under the supervision of the Bureau of Entomology.

#### ACCIDENTS

There were no serious accidents in the park during the season. This speaks very highly for the excellent manner in which transportation over roads and trails is conducted by the park operators.

**LAFAYETTE NATIONAL PARK**

GEORGE B. DORR, Superintendent, Bar Harbor, Me.

**ADMINISTRATION**

During the year the park was administered by the superintendent, with the aid of an assistant superintendent, clerk, chief ranger, and three rangers.

**TRAVEL**

Travel to the park this year has shown a distinct increase. The number of people coming by rail and boat exhibits a slight falling off, but increase in motor travel has more than made up for the loss. Estimated figures show the total for the year to be 73,673 as against 71,758 for the 1924 season.

**HIGHWAY IMPROVEMENT AND MOTOR CAMPING**

Steady improvement has been taking place in the State highways leading to the park, and motor camping is increasing rapidly. Careful study has been made this year for an attractive motor camp site, which has resulted recently in the acquisition, for presentation to the park, of a site ideally fitted for the purpose, bordering the coast and ample in extent. When laid out for motor camping and properly equipped with roads, water supply, and sanitary conveniences there will be few in the country equal to this camp in attractiveness.

**ROADS**

The new motor road through the park from Bar Harbor to Jordan Pond and connecting with the public highway on the southern shore has been in use this summer as far as Bubble Pond, and by the opening of next season will be built throughout. It is superbly beautiful and so far as finished has been widely used. The cost of this road has been contributed.

Work on the extensive road system for use with horses, for which funds were also contributed, is progressing rapidly.

Last spring the park received from Congress its first road-building appropriation and work is now actively progressing on the Cadillac Mountain Road. Land has been donated to provide for an entrance from the highway near Bar Harbor to the park lands at the foot of Champlain Mountain, with parking grounds for those who wish to use the trails, and this entrance road also is under construction.

**WILD LIFE**

The native wild life of the region is increasing rapidly under the protection of the national park. Deer are abundant and are often seen and the whole park area must ultimately become a living museum of the regional life.

A visit was paid the park in August by Dr. Vernon Bailey of the Biological Survey who came officially to study the park beaver, whose colonies, sprung from two pair introduced a few years since, have thriven wonderfully.

**FISH PLANTING**

The commissioner of inland fisheries and game for the State of Maine has been most generous during the past year in allotting fish for planting in park waters. In the early spring 100,000 trout and salmon fry were planted, followed later by one thousand and five hundred 6-inch trout and salmon which had been carried over the winter in one of the near-by State hatcheries. Other plantings of fish of the fingerling size are allotted for planting in October. This cooperation by the State is deeply appreciated.

**STUDY OF PARK FLORA**

The wild flowers of the park have been again studied this year by Dr. E. T. Wherry of Washington, D. C., president of the Washington Wild Flower



Society, who has now compiled a descriptive list of some hundreds of the most beautiful and interesting of the native plants which it is hoped means may be found to publish next year for the use of visitors. The flora of the park is exceptionally rich, the whole region of our northern coast and ancient Acadia being naturally represented in it.

#### FIRE

The park has been free from serious fire during the present season although dangerous fire hazards existed.

#### GOVERNOR'S VISIT

At the beginning of the season Bar Harbor was visited by the assembled governors of the States, who met at Poland Springs for their annual official conference and made a two days' visit following it to Mount Desert Island and the national park.

Since he took office in January the Governor of Maine, the Hon. Ralph O. Brewster, has visited the park three times.

#### TOWN AND PARK PUBLICITY

A feature strictly lying outside the park activities, but which should none the less be mentioned, is the publicity campaign carried on in the interest of the park, as well as island, by the town of Bar Harbor. In addition to descriptive publications, the town conducts a bureau of information, adjoining the park office, which answers practically all questions asked by visitors in relation to the park.

#### ZION NATIONAL PARK

RICHARD T. EVANS, Acting Superintendent, Springdale, Utah

On May 15 the Utah Parks Co. had ready for guests their new two-story rustic lodge containing the kitchen, dining room, lounging room, and shower baths, and 46 double cottages providing sleeping accommodations for 184 persons. A gasoline plant lighted the lodge and later a second unit furnished electric lights for each cottage. Located in a broad court from which excellent views of the towering temples are had, designed and arranged in approved artistic manner, the whole truly invites one to come and linger.

The autos and busses of the Utah Parks Co. and the Utah & Grand Canyon Transportation Co. were new and furnished excellent service to Cedar City and Grand Canyon.

#### ROADS WITHIN THE PARK

In the spring the new road was pushed to the Temple of Sinawava, thus completing the  $7\frac{1}{2}$  miles within the canyon. This road of white gravel with a 2-foot border of red clay on each side stretches along like a neat ribbon. To protect it from the ravages of flood waters, 440 feet of timber and rock wing dams were constructed against the river current.

#### APPROACH ROADS

Road development, present and future, is the greatest factor in Zion's growth. Already the road from Cedar City, designated a Federal highway, has been improved as far as Toquerville, 35 miles, including the construction of two highway bridges. Surveys have been made and preparations completed to construct 10 miles of new road from Grafton to the park line as soon as the tourist season is over, between October 15 and November 1. That will mean that by next May, of the 65 miles to Cedar City, 48 will be standard highway.

The completion of the bridge at Rockville in the spring and the conditioning and regrading of the 15 miles of road beyond by the end of June opened to travel the cut-off to Grand Canyon, which reduces the distance by 30 miles. Though one grade of a quarter mile exceeds 15 per cent, most cars negotiate

the road successfully. Along several miles of the road striking panoramas are had of the temples of Zion.

#### PINE CREEK ROAD

There is great need for a new road to the eastward, for distances are still vast. Preliminary surveys by Mr. H. O. Means, State highway engineer, and B. J. Finch, district engineer, Bureau of Public Roads, disclose the fact that a road up Pine Creek to Mount Carmel is feasible. The actual survey of the road was undertaken in September by the Bureau of Public Roads. This road besides being one of the most scenic in the country and destined to become famous as an engineering feat will shorten distances from Zion entrance to important points as follows:

Zion to Fredonia .....	74 miles reduced to	51
Zion to North Rim of Grand Canyon.....	147 miles reduced to	124
Zion to Bryce Canyon.....	161 miles reduced to	87
Zion to Cedar Breaks.....	147 miles reduced to	73
Zion to Cedar City via Mount Carmel.....	173 miles reduced to	100

#### TRAILS

All trails have been maintained against steady travel and occasional wash-outs. Several miles of new trails have been built on the benches within the canyon providing delightful trips both for forenoon and afternoon shadows. New footbridges at the public camp grounds and opposite the lodge afford passage to the west side of the river.

From the end of the road in the Temple of Sinawava to the Narrows a distance of 1 mile, a path for pedestrians and another for horses have been built to supply the most delightful excursion in the park.

To render the climb to Angels' Landing safe for the timid person 500 feet of pipe railing have been placed in the more dangerous sections.

#### PUBLIC CAMP GROUNDS

A comfort station with modern conveniences was completed on the public camp grounds. Forty cars can park comfortably among the vineclad trees. Surfacing with red clay and tree planting have prepared an addition to the grounds for next year, and continued preparation will take care of the patrons for several years.

#### NATURE GUIDE SERVICE

Mr. Angus Woodbury of St. George, Utah, has established a nature guide service, collecting and preparing for exhibition a wide variety of flowers, plants and insects; lecturing three or more evenings each week on the history, geology, and botany of the park and conducting afiel nature classes several days each week.

#### PARK TRAVEL

During the year a total of 16,817 visitors came to the park, as against 8,400 during 1924. The travel for the year was divided as follows:

Number of private automobiles	Visitors		
	By private automobile	By stage and miscellaneous	Total
3, 928	14, 036	2, 781	16, 817

The free public camp grounds were used by 10,527 motorists during the year—more than the total number of visitors to the park in 1924.

## REPORT OF THE CIVIL ENGINEERING DEPARTMENT

BERT H. BURRELL, Acting Chief Civil Engineer

Effective July 1, 1925, the chief civil engineer's office was reorganized. Former Chief Civil Engineer Goodwin was relieved from duty by the Secretary of the Interior and Bert H. Burrell was designated acting chief civil engineer. The following report covers the period of accomplishments under the direction of the former chief civil engineer up to June 30, 1925.

Previous to appropriation of funds under the road budget in December, the engineering division not alone prepared plans, estimates, and designs of work to be done with the road budget funds but had also completed contract and force account work amounting to approximately \$272,000 from the yearly park appropriations.

The Middle Fork Road in Sequoia National Park, which is now being constructed by park forces, was staked for construction to a 20-foot width from the end of the former construction to a connection with the Giant Forest Road, and approximately a mile of the heaviest of this construction was done prior to the road budget appropriation. The reconstruction of the Giant Forest Road from the entrance to Hospital Rock was started by hired labor in April and has been continued up to the present date, and will soon join up with Smiths Grade and the present Giant Forest Road. Some widening has been done from Hospital Rock up to Giant Forest, which until last year had been constructed to a width of but 12 to 16 feet. The total cost of work in the park to date has been \$90,713.76, with 7 miles under construction and practically completed.

In Mount Rainier Park, under the emergency allotment of \$13,000, log-crib revetments and diversion cribs were constructed along the Carbon River in an effort to save the road, which closely approximates the river bank in location. Floods of last year did considerable damage, however, which was repaired by park forces. Park forces also continued the work of opening up the new camp grounds to be served by the new suspension bridge built last year. Surveys have been started on the Nisqually Road from the park entrance to Longmire, and approximately 5 miles of survey have been completed, this with a view to surfacing the section from the park entrance to Longmire with a high-type pavement. Preparations are being made for surveys on the West Side Road and the White River Road, and plans were drawn up by this office for the construction of 7 bridges and 3 box culverts, using 18-foot roadway, for the Nisqually Road between the park entrance and Paradise Inn.

In Glacier National Park two contracts were let for work on the Transmountain Road, one for the completion of 10 miles of the St. Mary Lake section, the other for about 6 miles on the Mount Cannon section, on the west side. This latter contract was cut down to 3 miles of new construction, making a connection with the Bureau of Public Roads survey for the remaining portion of the Transmountain Road. Both contracts have been delayed from various causes, principally storms, but will be completed this season. An allotment of \$20,000 was made for the survey over Logan Pass, between the two previously mentioned contracts on the Transmountain Road, the actual survey being turned over to the Bureau of Public Roads, who started it last September, completing approximately 22 miles of survey before the weather made it impossible to continue. The plans for these surveys were made in this office during the winter, and in June bids were opened by the Bureau of Public Roads for the construction of 12 miles on the west side. The contract was let for a total obligation of \$975,000 of the road budget money. Work upon the contract was started late in June this year. Contract for the construction of 6 or 7 miles of new road up the Two Medicine Lake, in Glacier National Park, was let by this office at a cost of approximately \$61,500, and the construction on that section started after July 1.

Thirty miles of surveys were completed in August in Lassen Volcanic National Park, the funds for which were jointly provided by the State of California and the engineering division. This completed the preliminary location of the 60-mile park road trunk system. Sixteen miles of final surveys have been completed and the plans are prepared to call for bids for construction and reconstruction, probably with a gravel surfacing. Preliminary plans and estimates for 40 miles of roads of the system were worked up in the Portland office during the winter, the work consisting of the preparation



of plans, designs, estimates, and routine matters connected with the construction of the various projects.

In Zion National Park the road from the park entrance to the Narrows, a distance of approximately seven miles, was completed by contract in June of this year at a cost of \$77,798.77. The 220-foot steel bridge across the Virgin River near Rockville was completed in March of this year at a total cost of \$37,808.66.

In Hot Springs National Park surveys were started on projects 1, 2, and 3, and construction by hired labor was started immediately behind the surveys. The total cost of this work to June 30 was \$2,032.57 for engineering, \$20,963.12 for hired labor; approximately 3 miles of the entire program being completed.

In Yellowstone National Park the surveys and construction program were carried on under Resident Engineer Burney, under direct supervision of the park superintendent. This is covered in the Yellowstone report.

In Yosemite National Park 29 miles of survey were made on the floor of the valley and down to El Portal. Contract was let for surfacing these roads with asphaltic concrete pavement for a sum aggregating \$640,000. Considerable work was done by the park forces under the direction of the park superintendent and Resident Engineer Taylor. This is covered in the Yosemite report.

On June 13 a contract was entered into for the paving of the Medford and Klamath entrance roads, Crater Lake National Park. The contractor is now setting up his plant for immediate construction. This work involves the construction of approximately 18.3 miles of bituminous macadam 16 feet wide, for an obligated amount of \$234,770.

A contract for the reconstruction and surfacing of six miles of road with crushed gravel, in Platt National Park, has been let for an obligation of \$32,205.80. Work has since been started on this contract. The work consists of considerable rectification of road widths and grades, and widening of drainage structures, and the surfacing of 6 miles with gravel.

In Mesa Verde National Park bids were received for approximately 4 miles of new construction, but on account of the extremely high prices the bids were rejected and the work is being done by hired labor, principally Navajo Indians, in addition to other work that was authorized to be done by that method. To date 3 to 4 miles of old road have been reconstructed and the work on the new construction has just started.

In Rocky Mountain National Park 5 miles of preliminary surveys have been made on the Deer Ridge and Moraine Park Roads, the work to be done by contract and hired labor respectively.

Since the road budget money was made available the personnel of the engineering division has been greatly increased in order to handle the tremendous program which was necessary in order to obligate the funds. The engineering division has prepared plans, designs, and estimates for all of the work above mentioned, except as noted, in addition to which there has been a considerable amount of routine work connected with initiating and carrying out of such a large program. In connection with the executive section of the work in this division it might be mentioned that 23 contracts have been entered into for supplies and equipment, 10,681 pieces of mail and telegrams have been received or sent out by the office, 8 complete sets of specifications for road construction have been prepared, at a total executive cost for the engineering office of \$17,028.70. This does not include engineering charges made directly to the projects in the various parks.

## REPORT OF THE LANDSCAPE ENGINEERING DIVISION, 1925

DANIEL R. HULL, Landscape Engineer

Reviewing the past year's work of the landscape division I find that a larger portion of time than ever before has been given over to landscape protection in connection with the road construction program. This work, done in conjunction with the Bureau of Public Roads and the civil engineering division of the National Park Service, has included inspection of the territory before survey is made, going over preliminary road line with the idea of suggesting modifications for the protection of landscape features or to take advantage of some scenic point which had been previously overlooked, and inspection on the ground during actual construction for the purpose of aiding in the best means of carrying the program forward, particularly with an idea of making the fin-

ished result the best possible in its relation to the landscape. Bridges in connection with the road projects have received considerable attention.

In many of the parks new buildings have been constructed from plans prepared by the landscape division and it has been gratifying to note how closely the plans have been followed in this construction work.

The present ruling making \$1,500 the limit for any building constructed in the parks by the Government (except by special act of Congress) has worked a real hardship and an effort should be made to have this figure increased to \$3,000, or to have it entirely removed, leaving to those administering the parks the question of amount required to produce the desired result. This would make possible a higher standard in Government buildings in the parks and would undoubtedly mean economy in the long run as we find many of our buildings, constructed at too low cost, fast falling into disrepair.

Community centers and industrial areas have been developed in several of the parks during the past year and in this connection should be mentioned the need for securing, in advance of actual needs, surveys of such areas as are or may be occupied by groups of structures. These surveys should be of a scale large enough to indicate all natural features on the area, trees, rocks, etc., and the contours should be not less than 5 feet intervals.

Removal of telephone lines and the general improvement of appearances along the park roads has taken place this last year to a noticeable degree, this being particularly true in Yellowstone where a public-spirited citizen has supplied funds for the cleaning up of many miles of roadway in that park.

A small amount of reforestation has been done during the past season and it is hoped that there can be greater activity along this line in the future. The use of trees in screening or masking unsightly objects or burned-over areas adds much to the beauty of the landscape.

In cooperation with the engineer of the Public Health Service, Appolinaris Spring, in Yellowstone Park, was developed in a way which not only makes the area more attractive but affords perfect safety from a sanitary standpoint. Springs in many of the parks should be studied with an idea of increasing their usefulness and beauty and it is hoped funds will be made available for this purpose.

Public camp grounds of high standard have been laid out in several of the parks and these, perhaps more than any other single thing, have helped to give the national parks a reputation for public service of a high order.

Various operators have carried on construction programs in the parks and this work has followed more closely than ever before the outlines suggested by the landscape division.

## REPORT OF THE EDUCATIONAL DIVISION

ANSEL F. HALL, Chief Park Naturalist, Berkeley, Calif.

The headquarters of the educational division of the National Park Service have been established at Berkeley, Calif., near the University of California. Arrangements have been made for the rental of laboratories, shops, and a studio, so that, besides the regular executive work, models, natural history groups, and other museum exhibits can be constructed by the chief naturalist and by naturalists from near-by parks during the winters. A photographic laboratory is also available where lantern slides and other visual education material will be produced.

The chief naturalist, who spent the period from August, 1923, to July, 1924, in Europe, studying parks and museum problems, has carried on his park-service duties during the past year when these did not interfere with his major work of erecting the new Yosemite Museum as executive agent for the American Association of Museums. On June 1, 1925, Mr. Hall resumed his official status and is now devoting his entire time to his National Park Service educational work.

### MUSEUMS

The erection of the new Yosemite Museum by the Laura Spelman Rockefeller Memorial, under the auspices of the American Association of Museums, should give impetus to this important phase of the educational movement. It is not the purpose of the service to develop large and spectacular museums in any of the parks. They should, instead, be of such a nature that they will



orient the visitor and tell him in a simple way the consecutive story of the park from its oldest rocks to the coming of mankind and his preservation of the area. We should always keep in mind that our greatest museum is the out of doors and that the main function of our man-made museums is to help visitors gain a viewpoint and thorough understanding by the guidance of applied scientific knowledge.

Where striking geological, historical, biological, and other unique features occur in the parks, they should be carefully conserved in place and made attractive to the visiting public by being labeled and thoroughly explained.

#### THE NATURE GUIDE MOVEMENT

Field trips are conducted by Government nature guide rangers in Yellowstone, Yosemite, Rainier, Rocky Mountain, Glacier, Sequoia, and Zion National Parks. It is gratifying to know that each year a larger percentage of visitors take advantage of the opportunity to study their national parks more intimately. Indeed, where this kind of service has been provided, the demand has been for even more service than could be furnished. A measure of the success of the nature guide work may be gained from the fact that outside organizations added the services of three nature guides to the educational staff in Yosemite National Park during the past season. One of these was furnished by the Yosemite Park & Curry Co., one by the cooperation of the Sierra Club and the Yosemite Natural History Association, and one under funds provided by the Laura Spelman Rockefeller Memorial grant.

#### BOOKS AND PUBLICATIONS

The sending out of regular issues of nature notes by the park naturalists of Rainier, Sequoia, and Yosemite National Parks has maintained public interest in the various features of the out of doors in these parks and is heartily commended. Items from these publications are reprinted by several newspapers and magazines and reach thousands of individuals. Through the cooperation of the Yosemite Natural History Association, Yosemite Nature Notes has been printed since January, 1925, and distributed to all members as well as to the Government free mailing list.

Superintendent Albright's information bureau in Yellowstone National Park made a remarkable record in selling park publications to the value of \$7,900 during June, July, and August, 1925. This means that thousands of persons will this winter be reading about Yellowstone National Park and learning interesting facts that will make them wish to return.

The educational accomplishments of the past year are but the beginning of a great movement that is making itself felt throughout the country. We must prepare to meet the demands for accurate knowledge of the out of doors in our parks.













U. S. DEPARTMENT OF THE INTERIOR

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R E P O R T  
OF THE  
DIRECTOR OF  
THE NATIONAL PARK SERVICE

TO THE  
SECRETARY OF THE INTERIOR

FOR THE  
FISCAL YEAR ENDED JUNE 30, 1926  
AND THE TRAVEL SEASON, 1926



WASHINGTON  
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1926

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# ANNUAL REPORT OF THE DIRECTOR OF THE NATIONAL PARK SERVICE

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DEPARTMENT OF THE INTERIOR,  
NATIONAL PARK SERVICE,  
*Washington, D. C., October 4, 1926.*

The SECRETARY OF THE INTERIOR.

SIR: August 25 this year marks the tenth anniversary of the creation, by special act of Congress, of the National Park Service as a separate bureau of the Interior Department. The organization of the bureau was effected in April, 1917, when funds for this purpose were made available.

Prior to this time the administration of the national parks and national monuments under the jurisdiction of the Department of the Interior was delegated by the Secretary to one of the divisions of his office in connection with other work falling under that bureau's miscellaneous activities. At the time of the organization of the service there were 17 national parks (one of which has since been made a national monument) and 19 national monuments so administered. At the present time there are 19 national parks and 32 national monuments administered by the National Park Service.

Although not quite 10 years have elapsed since the actual organization of the service, 1926 is the tenth travel year for which records have been kept by the service. Travel to the national parks and monuments during the travel year ended September 30, 1917, was 488,268, and this was considered large. During the travel year just ended 1,930,865 people visited the national parks and 384,040 the national monuments, or a total of 2,314,905. With the exception of 1918, which, occurring during the war period, showed a slight decrease from the preceding year's travel, there has been a consistently increasing annual travel to the national parks and national monuments.

These figures are indisputable evidence of the constantly increasing popularity of the national parks and monuments, and of the uses made of them.

Adjustments of the boundaries of several of the national parks have made increased areas available for the recreation and education of their visitors. Several proposed adjustments of other parks are pending before Congress. Furthermore, four new parks, three of them in the East, have been authorized by Congress and will be established as soon as certain conditions precedent contained in the organic acts creating them have been complied with. With the definite establishment of these parks and the consummation of the boundary adjustments the national park system will be prepared in a larger measure to render service to the traveling public.



## NEWLY AUTHORIZED NATIONAL PARKS AND CHANGES IN BOUNDARIES OF EXISTING PARKS

From the standpoint of legislation the past year has been the most successful since 1919, when the Grand Canyon, Zion, and Lafayette National Parks were established. During 1926 three national parks in the East were authorized by Congress and boundary adjustments of three existing national parks, recommended by the President's Coordinating Commission on National Parks and National Forests, were effected.

### NATIONAL PARKS IN THE SOUTHERN APPALACHIANS

The work of the Southern Appalachian Park Commission during the past few years in investigating proposed park areas in the Southern Appalachian Mountains culminated in your definite recommendation to Congress that the Shenandoah and Great Smoky Mountains National Parks be created. Acting upon this recommendation legislation was enacted providing that these two parks be established when a certain minimum specified area shall have been accepted by the Secretary of the Interior for park purposes.

The total maximum area involved in the Shenandoah National Park project is 521,000 acres and that for the Great Smoky Mountains National Park project is 704,000; but the act provides that after a minimum of 250,000 acres in the Shenandoah area and 150,000 acres in the Great Smoky Mountains area have been offered to the Secretary of the Interior and accepted by him for park purposes, the National Park Service may take over the administration and protection of these areas. In accordance with the terms of the act no general development is to be undertaken until the major portion of the remainder has been accepted by the Secretary of the Interior.

When the act authorizing these two new park areas was passed a total of \$1,200,000 had been subscribed for the purchase of lands in the Shenandoah area, and \$1,066,693 for similar purchases in the Great Smoky Mountains region.

### THE PROPOSED MAMMOTH CAVE NATIONAL PARK

The Mammoth Cave National Park was also created by congressional enactment, under conditions similar to those governing the establishment of the Shenandoah and Great Smoky Mountains National Parks, although no donations of money toward the acquisition of the proposed park area were tendered. The land to be included within this national park, as in the case of the Shenandoah and Great Smoky Mountains, must be secured by the United States through donation. The maximum area of the proposed park is set at 70,618 acres. The act provides, however, that when a minimum of 20,000 acres, including all the caves, is offered to and accepted by the Secretary of the Interior its administration and protection may be assumed by the National Park Service. No general development may be undertaken until a major portion of the remainder shall have been accepted by the Secretary.

## SEQUOIA NATIONAL PARK ENLARGED

The prolonged attempt to enlarge the boundaries of the Sequoia National Park by the inclusion of certain mountainous back country came to a partially successful conclusion on July 3, when President Coolidge signed the act adding Mount Whitney and the Kern River country to the park. Bills for the enlargement of this park have been before Congress continuously for 10 years. The first suggestion of the enlargement dates back to 1891.

While it is regretted that the present enlargement leaves out the beautiful Kings River region, which has been urged for inclusion since 1891, it adds to the park the superbly scenic area of the High Sierra directly east, including Kern Canyon and culminating in Mount Whitney, the highest mountain in continental United States. The total area of the enlarged park is 604 square miles, as against the former area of 252 square miles. Sequoia is now the sixth largest park in the system. It is hoped that eventually the Kings River area will also be added to the park.

During the last half dozen years the various enlargement bills introduced in Congress have provided for the change of the name of the park to Roosevelt-Sequoia. This year opposition to the change of name arose, both in the House of Representatives and the Senate, and the bill was amended in the Senate to retain the name of Sequoia. It was finally enacted carrying the old name of Sequoia National Park.

Too great credit can not be given the public-spirited organizations and individuals who have labored unceasingly for many years to bring about this enlargement legislation. Their assistance in bringing to public attention the wild beauty and importance from a national park viewpoint of the enlargement area has been invaluable. In this connection especial mention should be made of the Sierra Club of California.

## MOUNT RAINIER BOUNDARY ADJUSTMENT

Minor changes in the boundary of Mount Rainier National Park were made by congressional enactment in order to conform to natural boundary lines and in the interest of good administration. The changes occur in the southwest, northwest, and northeast corners, where boundary lines formed by rivers issuing from the park are substituted for the old arbitrary boundary following land lines. Ohanapecosh Hot Springs, just outside the southeast corner of the park, was originally recommended for inclusion in Mount Rainier National Park, but the bill was amended with my approval to eliminate this section.

## ELIMINATION OF PRIVATE LAND FROM ROCKY MOUNTAIN NATIONAL PARK

By the action of Congress in passing the boundary adjustment bill for Rocky Mountain National Park 11,480 acres of privately owned lands in the eastern portion of the park were eliminated, in order to facilitate the administration of the park. Over 9,000 acres of private lands still remain in the park, which I hope will be acquired and added to the park as opportunity arises.

A small tract of land on the north boundary was also eliminated. This was desirable owing to the fact that the old boundary cut across a small lake which was needed for use as a storage reservoir in order to irrigate farming lands on the plains.

Further adjustments on the north, west, and south boundaries were approved by the Coordinating Commission on National Parks and Forests, but were not acted upon this year.

#### TOTAL ELIMINATIONS OF PRIVATE LANDS IN THE NATIONAL PARK SYSTEM

Including the lands eliminated through the change in the boundaries of Rocky Mountain National Park, as noted above, the total amount of private lands in the national parks has been reduced from 99,826 acres in 1925 to 81,819 acres in 1926; a net reduction of 18,007 acres. While 1,667 acres were added to the total by the enlargement of Sequoia and Mount Rainier National Parks, there was a gross reduction of 19,674 acres in seven of the parks. Twelve of the 19 national parks have private lands, ranging in acreage from 160 in General Grant to 41,000 (estimated) in Hawaii.

The reductions in areas of private lands in the parks were effected by exchanges of park lands or timber in remote sections of the parks for private lands along the roads or in areas needed for administrative purposes; selections of lands outside of the parks in lieu of lands in the parks owned by the States; eliminations from the parks by changes in park boundaries; and by purchases of private lands in the parks by private individuals and donation of these lands to the United States.

The total area of the 19 national parks is 7,493,243 acres; thus the 81,819 acres of private lands remaining amount to slightly over 1 per cent of the total area.

#### FURTHER BOUNDARY ADJUSTMENTS PENDING

In addition to the boundary adjustments which were enacted into law, legislation is still pending regarding several areas which were inspected by the coordinating commission a year ago, as recorded in my last annual report, and other areas have been inspected during the past summer.

During the year the personnel of the coordinating commission was changed slightly owing to the resignation of Charles Sheldon, conservationist of Washington, and the appointment of Barrington Moore of New York, secretary of the Council on National Parks, Forests, and Wild Life, to fill this vacancy. Representative Temple of Pennsylvania retained the chairmanship of the commission and the remaining membership was the same as reported to you last year, except for the fact that for a short period during the summer Duncan McDuffie, of San Francisco, a member of the Sierra Club, served temporarily in the place of Major Welch, who was unable to be with the commission during the entire course of its field investigations. These investigations covered proposed boundary adjustments in Yosemite and Crater Lake National Parks. No report has yet been made by the commission.



## THE TETON ADDITION TO YELLOWSTONE

One of the most important boundary adjustment projects now pending is that to add the Teton Mountains and several smaller areas to Yellowstone National Park. A bill for this purpose was introduced in the first session of the Sixty-ninth Congress and extensive hearings were held before both the House and Senate Public Lands Committees. At these hearings Representative Addison Smith proposed an amendment to the bill to exclude an area in the southwest corner of the present park for the building of a supplementary irrigation reservoir for the farmers of Idaho. This is the same general area covered in Mr. Smith's bill introduced about six years ago providing for an easement within the Yellowstone for reservoir purposes, but is smaller in extent. This proposed amendment was vigorously opposed by both the National Park Service and conservationists from all over the country. The Yellowstone enlargement bill was not reported out of committee before the close of the first session of Congress.

Although this extension project was one of those recommended by the Coordinating Commission on National Parks and Forests, the Senate just before adjournment agreed to a resolution introduced by Senator Gooding, of Idaho, to investigate the advisability of changing the boundary of Yellowstone and other national parks. This commission visited the area the middle of August and held local hearings on the project.

## GRAND CANYON BOUNDARY ADJUSTMENT

The proposed changes in the Grand Canyon boundary recommended by the coordinating commission include small additions south of the Colorado, to make possible certain road realignments. Considerably more land is recommended for elimination on the south side of the river than is proposed for addition. On the north rim it is proposed to add enough territory to permit the building of roads to Cape Royal and Point Sublime, and also to add to the park a representative area of the Kaibab Forest for preservation for all time in its natural state. This latter addition would provide within the national park both summer and winter range for a portion of the Kaibab deer herd.

## SEVERAL NEW PARKS STILL NEEDED TO COMPLETE SYSTEM

In spite of the forward strides that have been made during the past year in national park creation, there still remain several areas of outstanding national interest which should be added to our national park system in order to make it fully representative of the range of wonders that the United States has to offer. Where these fall within national forest areas they will be investigated by the coordinating commission and recommendations made by that commission before any steps are taken looking toward their creation. These include the proposed Cliff Cities National Park and the enlargement projects previously referred to.

### BRYCE CANYON STILL A NATIONAL MONUMENT

The status of the proposed Utah National Park remains the same as reported in my ninth annual report. So far the Government has been unable to secure the private holdings in this area, and under the terms of the act of Congress creating this park it can not be established until title to these lands has been vested in the United States. Until the park is established the area will continue to be known as the Bryce Canyon National Monument.

### ISLE ROYALE PROJECT PROGRESSING

Efforts have been continued during the year to acquire privately owned land on Isle Royale, in Lake Superior, and donate it to the United States for use as a national park or monument. I personally inspected this area several years ago and believe it eminently fitted, because of its natural beauty and abundant wild life, for park purposes. It is my sincere hope that the land may be acquired in the near future and dedicated to the recreational needs of the American people.

### GRAND CANYON EXCHANGE OF LANDS

An exchange of lands was effected in Grand Canyon National Park whereby certain private holdings were consolidated and approximately 23 acres were added to the park lands. In the exchange the owner of the private holdings, William Randolph Hearst, conveyed to the Government 48.9 acres of his private lands in return for 25.8 acres of Government lands. One advantage of this exchange from the Government standpoint is the fact that it brings all the private lands in this holding lying west of the new Grand Canyon-Desert View Road, now under construction, under Government control. It also makes a portion of the rim of the canyon freely accessible to the public over Government land.

### NATIONAL MONUMENT LEGISLATION

No new national monuments were created during the past year, and the only change made in the areas of the existing monuments was the elimination of 7.5 acres from the Casa Grande National Monument. This piece of land was needed in connection with the construction of a canal to provide water for the irrigation of lands of the Pima Indians. Since the monument would not suffer by the elimination of the lands in question, the service concurred in the recommendation of the Commissioner of Indian Affairs that they be withdrawn, and congressional legislation to effect this was secured.

### EDUCATIONAL DEVELOPMENT

In a recent article you state that "a new mission has come into existence for national parks, which is educational in character and which opens up a new field for the propagation of knowledge never before realized. Nature is the supreme school-teacher as well as the master textbook. From nature can be learned the scheme of creation and the handiwork of the Great Architect as from no other source."

For six or seven years the service has been slowly developing educational facilities within the parks so far as small funds officially available and those provided from private sources permitted. Just before the assembling of the Eighth National Park Conference last October an organization plan for an educational division for the National Park Service was worked out with your approval, and the conference was devoted mainly to discussion of this proposed expansion.

Permanent headquarters for this educational division were established at Berkeley, Calif., and equipped during the year. A ranger who had proven his capacity in this field was assigned in charge of the educational development throughout the system under the title of chief park naturalist, and in many of the parks rangers have been assigned to nature work. In several parks and monuments, aside from Yosemite, Mesa Verde, and Casa Grande, where permanent museum buildings have been erected, museums have been started in vacant buildings or under canvas, in which are displayed exhibits helpful to visitors in understanding the greater museums which are the parks themselves.

A number of organizations cooperating with the Government have helped materially in equipping and using the parks, particularly Yosemite, for educational purposes. Among the earliest in this field were the Sierra Club, the California Fish and Game Commission, and the University of California. The most conspicuous service during the year, however, was that rendered by the committee on museums in national parks, organized by the American Association of Museums, which last year secured from the Laura Spelman Rockefeller Memorial funds for the building and partial equipment of a fine museum in Yosemite National Park. The scope of this committee has been recently enlarged and its title changed to the committee on outdoor education. It is now making studies for appropriate educational museums in Grand Canyon National Park and the Palisades Interstate Park. Its program contemplates during future years museums and trail side museums in many national parks and monuments, for which it will seek funds from private sources, and which it is hoping may be supplemented by Congress with additional funds. The National Parks Association has also taken a great interest in the educational development of the parks and has been considering the system largely from the educational point of view.

But equipping and using parks themselves to help those who visit them to understand nature's amazing revelations is by no means to accomplish all the system's educational mission. To the many millions who have not visited national parks and do not expect to visit them, the system as planned may tell wonderful stories of creation. It is possible to make the national park system one of the most useful educational institutions in the world through dissemination of information regarding them, through private and public schools, through university extension service, through popular lectures in every part of the country, through lantern slides and other forms of visual education, and through popular writings in magazines and books.

Although the National Government naturally can not participate in this general educational movement outside of its own territory,



except by cooperation of its own educational system where this may be possible, it seems proper to mention so important a possibility based upon a system of Government reservations. There are those who in giving this plan effective practical development see the national park system as a concrete national institution, as if every park unit were a building, say, devoted to the principal exposition of some particular branch of the natural sciences, all inclosed within campus walls. This idea has been expressed by the phrase—national super-university of nature—in which the national park system may be conceived. In this conception the parks themselves are both exhibits and teachers, an idea which you have advanced.

#### NATURE GUIDING

Of the various educational facilities offered, the nature guide service is undoubtedly the most popular with visitors. The field trips conducted by the nature guides, who explain clearly and simply various objects of natural history observed along the trail from a botanical, zoological, archeological, and geological standpoint, are both educational and inspirational, and hundreds of thousands of people visiting the parks took advantage of these trips. This service was inaugurated in Yosemite National Park 7 years ago through the cooperation of the California Fish and Game Commission, which furnished funds for the workers' salaries, the Government furnishing the office and museum room and the incidental active cooperation of temporary rangers. It is now available in Yosemite, Yellowstone, Glacier, Mount Rainier, Sequoia, Grand Canyon, Zion, and Crater Lake National Parks in a greater or lesser degree, and in the Casa Grande and Petrified Forest National Monuments.

In the Mesa Verde National Park, in lieu of the nature guide service, personally conducted trips to the fascinating ruined dwellings of a prehistoric people are available, and in several of the national monuments where historic or prehistoric ruins are of national interest, personally conducted trips are also carried on. There has been no more popular and enthusiastic service of this kind than in the Casa Grande National Monument, where Superintendent and Mrs. Pinkley have given every ounce of energy and loyalty to this work.

#### YOSEMITE FIELD SCHOOL OF NATURAL HISTORY

A direct outgrowth of the nature guide work was the establishment last year of the Yosemite Field School of Natural History. So popular was this school that it was again conducted this year with four or five times as many students seeking enrollment as last year. It was considered advisable again to limit the number permitted to enroll to 20. As the school is a contribution to nature education through a cooperative arrangement between the National Park Service and the California Fish and Game Commission, no tuition was charged. The work of the field school, which is of university grade, supplements the lower division of the university courses in botany and zoology, bringing first-hand acquaintance with the various living forms of the region. Each student attending the field school had practice in teaching, conducting parties out into the field, giving

camp-fire talks, and in preparing nature notes. With the completion of the new museum building ideal lecture room, library, and other facilities are available for the use of the school.

#### LECTURES ON PARK SUBJECTS

Lectures on national park subjects are given nightly around the camp fires and in the museums, hotels, and camps by the nature guides and park naturalists, as well as by visiting scientists. As the majority of these engaged in this work are or have been members of the faculties of colleges and other institutions of learning, the information disseminated is accurate. The lectures are delivered in popular form, which makes them intelligent to the layman as well as to the student of science.

#### MUSEUMS IN THE PARKS

Particularly keen interest is manifested in museum expansion in the national parks, and exhibits are gradually being collected even for those parks which as yet have no adequate museum buildings. The cooperation of the American Association of Museums in this cause has been invaluable, both by constructive criticism and furnishing inspiration to the service's forces.

The new Yosemite Museum, which was made possible through the efforts of the American Association of Museums, as described above, was opened early in the spring. An exhibition of early historical relics occupies the first floor of the building. The museum is headquarters for the nature guide service as well as for the field school of natural history. The park naturalist staff spent much time during the past winter in moving exhibits from the old temporary building and preparing a number of new exhibits. Through the Association of Museums the services of a taxidermist were secured, and a number of animal exhibits prepared for installation in the new building. Each month since the completion of the new building the park naturalist has reported the addition of a number of new exhibits. It is estimated that through this museum over 50,000 Yosemite visitors each year have become acquainted with the wild animal, bird, and plant life to be found in this region of the high Sierra, as well as with its historical background.

The museum at Yellowstone National Park was reorganized and plans for expansion developed. Many interesting additions to the exhibits were prepared and collected, and it is hoped that a new museum building to house the valuable and important installations already procured may be constructed during the next few years.

The first section of the new museum building in the Mesa Verde National Park, constructed through the generosity of a friend of the park, will be extended by the construction of a second wing, made possible by the generosity of another interested friend, who also placed funds available for the purchase of special exhibit cases for use in the section already completed.

Considerable progress was made in the collection of museum material in the Mount Rainier, Zion, Sequoia, Rocky Mountain, Glacier and Lafayette National Parks, although all the exhibits are still housed in temporary structures and in some cases tents.

## USE OF PARKS' EDUCATIONAL FACILITIES BY COLLEGES AND UNIVERSITIES

Recognizing the exceptional advantages offered in the national parks for the study of the natural sciences, a number of educational institutions have conducted their summer field schools in these reservations. During the past summer a party of 25 students of the Princeton Summer School of Geology and Natural Resources, under the leadership of its director, visited Yellowstone, Mount Rainier, Crater Lake, Glacier, Grand Canyon, and Yosemite National Parks, and the Petrified Forest National Monument. The students were required to read selected literature, study maps and folios, and take notes. The observations, reading, and study were supplemented by lectures before going into the field, and by conferences afterwards.

Northwestern University held a field course in geology in Glacier National Park, and the division of entomology of the University of California held its field course in entomology in Yosemite National Park. The visit of a party of students in geology at Colby College to Lafayette National Park is a yearly event.

## NATIONAL PARK PAGEANTS

Another interesting phase of educational work in the national parks and monuments is the staging of historical and allegorical pageants. The first of these to be presented this year was "Ersa of the Red Trees," presented in the Mariposa Grove of Yosemite National Park. This play is an appeal for the preservation of the noble Sequoia trees, and has been given previously in the Giant Forest of Sequoia National Park. Another great open-air pageant was presented in the Yosemite in connection with the diamond jubilee anniversary of the park's discovery and depicted the history of the valley during the past 75 years. In the Yellowstone a historical and allegorical pageant was produced, and pageants were also given at the Casa Grande and Pinnacles National Monuments. This work is in charge of the pageant master who was appointed last year.

In addition to the above, an interesting and impressive play called "Fire," based on Indian history and mythology, was given at Mesa Verde National Park. The services of local Indians were utilized in producing this play, which was written and staged by the wife of the park superintendent. It has been predicted that this play will in time become the Oberammergau of America.

## VISUAL EDUCATION

Undoubtedly the most important visual educational work carried on by the National Park Service is that provided through the museums and nature guide service in the national parks. This, however, is available only to actual park visitors, and there is a growing demand on the part of schools, clubs, and organizations all over the country for illustrated lectures, or the use of lantern slides and motion-picture film, in order that people who have not had an opportunity to visit the parks may become acquainted with their beauties through these mediums.

While its limited personnel permits the giving of only a comparatively few lectures by service officials, it has been possible to stimulate the giving of park talks by lecturers on the outside. In a number of instances it was possible for the service to arrange for

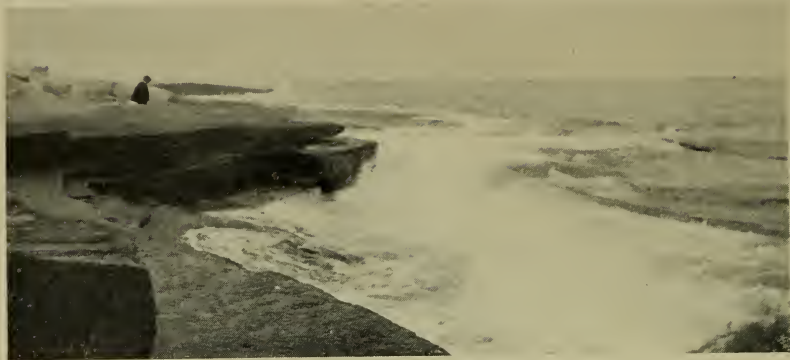




CROWN PRINCE OF SWEDEN AND HIS DAY'S CATCH  
YELLOWSTONE NATIONAL PARK



CROWN PRINCE AND PARTY ON NEW YAKI POINT SECTION OF KAIBAB TRAIL  
GRAND CANYON NATIONAL PARK



LAND BORDERING THE OCEAN RECENTLY SECURED FOR NATIONAL PARK  
PURPOSES

LAFAYETTE NATIONAL PARK

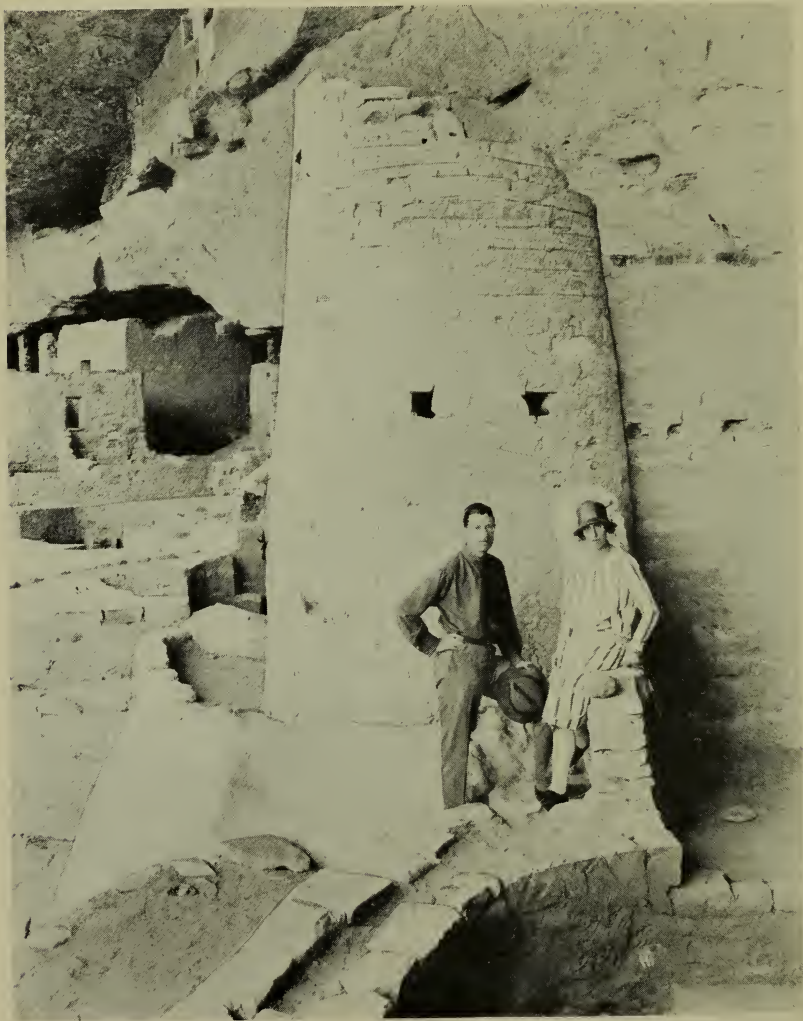


PHOTO BY BEAM

CROWN PRINCE AND PRINCESS OF SWEDEN BEFORE ROUND TOWER IN  
CLIFF PALACE

MESA VERDE NATIONAL PARK



park lectures in the auditorium of the Interior Department Building, or in high schools or other public buildings, for the information and enjoyment of the general public.

A small supply of lantern slides and photographs, and a very few reels of motion pictures are available in the Washington office for distribution. This material, which has been donated to the service through the generosity of commercial photographers, railroads, and other park friends, is so limited that it is impossible with it to meet all the requests received. With the growing demand for pictorial material of these various kinds one of the urgent requirements of the service is an appropriation to provide an adequate supply of photographs, lantern slides, and motion-picture films for general distribution.

In order that information regarding the national parks may be disseminated as widely as possible, during the past year a new policy was adopted which encourages the greater use of the parks as locations by commercial motion-picture operators. This is done under permit, and under restrictions that prevent injury to the natural features of the parks or inconvenience to park visitors. The taking of motion pictures of park scenery for inclusion in general news reels is specially encouraged.

#### ARCHEOLOGICAL AND PALEONTOLOGICAL EXPLORATIONS AND INVESTIGATIONS

At the Mesa Verde National Park considerable archeological work was carried on. The superintendent of the park is an archeologist of recognized ability and experience, and under his supervision the ruins already excavated are being put in the best possible condition with the funds available. This work was carried on with funds donated to the park two years ago for such work and will be continued with further promised funds. Two square kivas, most unusual in shape, in a spur canyon south and east of Balcony House, were cleared out, and many valuable artifacts were discovered and added to the museum collection. During the entire month of February an excavation camp was maintained at Step House Cave, the site of post-basket-maker culture. Work carried on at Buried House, opposite Fire Temple, brought to light some very interesting relics of this period. Explorations at this latter site were carried on under great difficulties, owing to the dust. The workers, using respirators, were unable to stay in the ruin longer than 30 minutes at a time, and a total of four hours' work a day was all that they could endure. Altogether about 10,000 pieces of post-basket-maker pottery were found. Many of these were assembled and the mended vessels placed in the museum.

General restoration and repair work was also accomplished at the historic and prehistoric ruins in the Chaco Canyon, Aztec Ruin, Casa Grande, Gran Quivira, Pipe Spring, and Tumacacori National Monuments. This was carried on under the general supervision of the superintendent of southwestern monuments.

In addition to the work carried on by the National Park Service, exploration work was carried on by several different organizations. The National Geographic Society continued excavations in the Chaco Canyon National Monument under a new permit issued by the



department this year. Under this permit work was continued at Pueblo Bonito and Pueblo del Arroyo, and new investigations at Pueblo Alto and Penasco Blanco supplemented the main project. Considerable valuable material was collected at Pueblo Alto and Penasco Blanco, and this will be exhibited with the material already collected in the museum of the National Geographic Society and in the United States National Museum in Washington. A permit was issued to the Smithsonian Institution to conduct archeological research work in the Wupatki National Monument, but investigations have not yet been undertaken.

Interesting paleontological investigations were carried on at the Grand Canyon National Park by Dr. Charles W. Gilmore, curator of vertebrate paleontology of the United States National Museum, and Dr. David White of the Geological Survey, with the cooperation of the service. Doctor Gilmore's work consisted in part of discovering and collecting a number of prehistoric animal tracks in the Supai formation, Hermit shale, and Coconino sandstone along the Hermit Trail. The finding of three successive rock formations along the trail bearing fossil animal tracks was especially interesting. Over 2,700 pounds of material, undoubtedly the best yet collected in the canyon region, was sent to the National Museum for classification and display. Doctor White's investigations were made in the Hermit shale, under the subvention of the Carnegie Institution, and materials were gathered to illustrate the plant life current in the region at the time of the deposition of the Hermit shales. The purpose of these paleontological studies was to gather information regarding the geological, climatic, and other physical conditions prevailing in the Grand Canyon region when these shales were deposited.

### SWEDISH ROYALTY VISITED SEVERAL NATIONAL PARKS

During the summer Crown Prince Gustaf Adolf of Sweden and the Crown Princess Louise, with a small party, visited Yellowstone, Zion, Grand Canyon, Mesa Verde, and Yosemite National Parks. The Crown Prince, who is a botanist and geologist of note, was much interested in studying the flora of the parks, as well as the fossil beds and prehistoric ruins. You officially welcomed the royal visitors on their arrival at Yellowstone National Park where they began their extended park tour. After visiting Yellowstone and Zion National Parks the royal party crossed by muleback from the North Rim of the Grand Canyon to the South Rim, proceeding from there to Mesa Verde and then on to Yosemite. The Crown Prince had only words of the highest praise for the conditions encountered in the various parks, and the enthusiasm and interest displayed by both him and the Crown Princess made it a pleasure for Park Service officials to meet and entertain them.

### WINTER USE OF THE PARKS

Although the mild winter experienced in practically all the western national parks curtailed ice and snow sports, travel was thereby made easier and the parks that were open to visitors experienced the heaviest winter travel in their history. Altogether 10 of the national

parks are now available for winter use, and several of the southwestern national monuments.

The winter season in Mount Rainier National Park, inaugurated several years ago, was opened earlier than usual last year, and accommodations were available both at Longmire and Paradise Valley. The public-utility operator removed the minimum limitation on the winter stage service between Seattle, Tacoma, and Longmire Springs, so that transportation was furnished irrespective of the number of passengers. The Alaska dog-team sled and snowshoes, skis, and other winter sports equipment were used when there was sufficient snow.

The annual outing of the Colorado Mountain Club was held in Rocky Mountain National Park, and also about 2,000 of the 3,000 persons attending the ski tournament at Estes Park made the trip into the national park.

The winter seasons in Sequoia and General Grant National Parks were particularly successful, more than double the visiting list of any previous winter being noted. In the latter park special ceremonies were held at Christmas time at the General Grant Tree, which was dedicated as the Nation's Christmas Tree. As usual Yosemite National Park experienced heavy winter travel.

Members of the Sierra Club of California visited Zion National Park in the late winter, although this is not rated as one of the parks open during the winter. Lafayette, our eastern national park, also had its quota of winter sports enthusiasts.

Grand Canyon, Hawaii, and Hot Springs National Parks, although not available for winter sports owing to their mild climates, are open throughout the year, and are becoming popular winter resorts.

### PARK WILD LIFE AND ITS PROTECTION

Without exception the various national parks reported the wild animals in unusually good condition, due to the mild winter weather that prevailed throughout the West. The protection afforded the game animals during the last few years has resulted in a gratifying increase in several species that were threatened with extinction. Notable among these are the antelope and buffalo herds of the Yellowstone. Both these animals, natives of the plains regions, were fast disappearing when full realization of their plight dawned on conservationists and the nucleus of the present herds was placed in the Yellowstone, one of their natural haunts. To-day after several years of barely holding their own and causing the park authorities considerable anxiety, the antelope herd is in excellent condition and shows a good increase. So rapidly has the buffalo herd increased that last year the service, with your authority, followed the policy adopted a year ago of donating some of these animals to zoos, public parks, and even to individuals with private game preserves. During the past year 19 buffalo were given away.

Even Mount McKinley National Park, in Alaska, experienced an unusually moderate winter, and the animals there are plentiful and comparatively tame. There are no indications of a further spread of the disease that killed so many caribou last year.

Mountain sheep were much more in evidence at the Grand Canyon than has been the case in the past, and were an interesting attraction to visitors using the trails down the canyon walls.

## MORE RANGE FOR NORTHERN YELLOWSTONE COUNTRY APPROVED

During the year Congress passed an act approving certain additions to the Absaroka and Gallatin National Forests, and the Yellowstone National Park, in order to improve and extend the winter feed facilities of the elk, antelope, and other game animals of Yellowstone National Park and adjacent land. While no land was actually transferred to these reservations through this act, it granted the Secretary of the Interior authority to accept donations of land for this purpose, or to purchase land with funds that may be donated for such purpose. Heavy hunting in the vicinity of the northern boundary of the park causes park and forest officials much worry, and it is hoped that lands may soon be secured to provide more game sanctuary. A total of 394 Yellowstone elk and 64 deer was killed by hunters during the open season last year after these animals had crossed the park boundary, in spite of the fact that during the hunting season special wild animal patrols were made by rangers along the park boundaries.

## HOOF-AND-MOUTH DISEASE CONTROLLED

During the early part of the year control activities of the hoof-and-mouth disease among the Yosemite deer were continued in co-operation with the Bureau of Animal Industry. No new infection was found during the year, however, and after conference with experts of that bureau all control activities within the park were discontinued on December 1.

## PREDATORY-ANIMAL CONTROL

In the majority of the national parks predatory control work was carried on either by representatives of the Bureau of Biological Survey or by park rangers. It is contrary to the policy of the service to exterminate any species native to a park area, but it is necessary to keep several of the predatory animals, such as wolves, mountain lions, and coyotes, under control, in order that the deer, antelope, and other weaker animals may not suffer unduly from their depredations.

## FISH-PLANTING OPERATIONS

In order that visitors might find good fishing available within the national parks, fish planting operations were continued, in cooperation with both the Bureau of Fisheries and State hatcheries. In the Grand Canyon 25,600 eyed eggs of Loch Leven trout furnished by the Federal hatcheries were planted. A total of 3,266,600 trout fry hatched at the Federal hatchery in Glacier Park were planted in the streams and lakes of the park, in addition to important plantings of fingerlings.

The largest planting of fish was in Yellowstone National Park. Here over 5,000,000 black-spotted trout eyed eggs and fingerlings from the park hatchery were planted in park waters, and over 8,000,000 eggs were shipped to points outside. Several carloads of trout were received in Crater Lake National Park through the cooperation of the State game commission, 100,000 rainbow trout were planted in Lassen Volcanic National Park, and 380,000 rainbow trout from the State hatchery were planted in Rocky Mountain National Park.



An adequate supply of fish in the future has been assured Yosemite National Park by the contract entered into during the summer with the California Fish and Game Commission for the leasing of land in the park on which the State will erect a fish hatchery. Plans are now being drawn for this hatchery.

### ROAD DEVELOPMENT AND FUTURE PLANS

Under authority of the act of Congress approved April 9, 1924, authorizing appropriations of \$7,500,000 over a three-year period for construction of roads and trails in the national parks and monuments, there has been appropriated to date \$4,500,000. In addition, under the 1927 Interior Department appropriation act you were authorized to enter into contracts obligating not to exceed \$1,500,000 for road construction to be paid for from future appropriations. There is still to be appropriated under the original authorization the \$1,500,000 against which obligations have been incurred during the 1927 fiscal year and \$1,500,000 additional in cash.

Excellent progress has been made on the road program during the past construction season under the cooperative agreement entered into last year with the Bureau of Public Roads of the Department of Agriculture whereby that bureau is supervising the construction of major road projects in the national parks.

As the highest road standards covering grade and alignment have been adopted for national park roads, the authorized appropriations, estimates for which were based on the use of lesser standards, will not be sufficient to complete the first program. Necessary data based on reconnaissance and location surveys have been secured by the Bureau of Public Roads during the summer for formulating with close accuracy a second program of road construction. It is proposed to present this proposed program to you for your approval and transmission to Congress through the Bureau of the Budget with the request for new legislation authorizing a continuance of the appropriations for the construction of adequate road and trail systems in the national parks and monuments.

### PRESERVATION OF PARK SCENERY

The preservation of the natural features of the park, while at the same time developing these areas so that visitors may have the necessary accommodations and facilities to see and enjoy them, is one of the big problems with which this service has to cope. The burden of insuring the preservation of park scenery falls upon the landscape engineering division, which supervises the location of roads, bridges, telegraph and telephone lines, and buildings, both governmental and those of the public operators. It also passes on designs for all buildings to prevent the marring of the landscape by the erection of inharmonious structures.

The most extensive work of this nature was in connection with the road construction being carried on in cooperation with the Bureau of Public Roads under the road budget. In addition to seeing that the roads are located with the least injury to the chief scenic features of the park, it is important that attention be given

to the preservation of the forests and other natural features along the line of the roadbed, the cutting of vistas, and the harmonizing of the necessary culverts and bridges with the landscape.

A variety of buildings, bridges, gateways, and other structures has been constructed during the past year, and each has been carefully planned for its particular site. It is gratifying to note a higher standard developing in the planning of structures by the public operators, with whom the landscape engineers work closely.

Several general layouts have been under development during the year. Important among these was the cleaning up of the Giant Forest area in Sequoia National Park and the removal of the old village from the heart of the forest to a site near its outer edge.

The limitation of \$1,500 for any Government structure within a park, unless a larger amount is specifically authorized, is still working a hardship on the service. It is therefore hoped that the amount authorized may be increased or the limitation entirely removed.

### COMBATING INSECT INFESTATIONS IN PARK FORESTS

The control of insect infestations in the virgin forests of the national parks was continued during the year in cooperation with the Bureau of Entomology of the Department of Agriculture. An appropriation of \$20,000 was made by Congress to meet entomological emergencies and to provide for investigation and control work.

In Yellowstone National Park the needletyer infestation in the lodgepole pine in the vicinity of West Yellowstone, which was so serious last year, greatly increased. In order to control this all the infested trees along the West Yellowstone-Madison Junction Highway were sprayed, with excellent results. The sawfly, which during the past few years has been working with the needletyer, was greatly reduced in numbers this year. A barkbeetle infestation was discovered in the whitebark pine in Dunraven Pass and the necessary control measures undertaken. Insect conditions in the park forests are now much better than at any time during the past three years.

At Crater Lake National Park the infestation in the beautiful yellow pine stand at the south entrance, and also the lodgepole infestation, were brought under control. Owners of private property bordering the park cooperated by carrying on yellow pine control work on a much larger scale than that undertaken in the park. Further control work in the park will be carried on this fall.

Careful study by a representative of the Bureau of Entomology of the white fir infestation in Yosemite which was so serious last fall showed that the situation in this timber had appreciably improved. Minor infestations in yellow pine stands were located and cleared up by park forces.

The Black Hills beetle infestation discovered on the North Rim of the Grand Canyon was brought under control. In Mount Rainier Park a survey was made of the mountain pine beetle infestation in scattered stands of white pine and control undertaken.

The cooperation of the Bureau of Entomology in detailing its experts to assist in combating insect depredations in the park forests is extremely valuable, and it is important that annual appropriations for this purpose be continued.

### PROGRESS IN ROADSIDE CLEAN-UP

The work inaugurated in Yellowstone Park last year in cleaning up the roadside was continued during the past year through the generosity of a friend of the parks who made the initial work possible. During the year 9 miles of road were improved, at a cost of approximately \$9,068. This completes the beautifying of the roadside from Mammoth Hot Springs to Norris Junction, with the exception of two difficult stretches that together average only a mile. The Lake Shore project, a stretch of road between Lake Junction and Bridge Bay, was also completed. During the summer the donor of these funds visited the park and was so pleased with the work accomplished that he authorized its continuance during the coming year. Experience has shown that the spring is the best time to undertake this clean-up work, for the reason that it is more difficult to secure men to work in the snow and rain of the fall months, as well as because of the fact that the snow obscures a great deal of the débris that has to be removed from the roadside.

Preliminary plans have also been made for a certain amount of roadside clean-up work to be undertaken in Crater Lake National Park through the donation of funds by the same friend of the parks.

### FOREST-FIRE PREVENTION AND CONTROL

The danger of fires developing in the park forests is an ever-present menace, but in most of the parks the precautions taken last year prevented serious conflagrations. Owing to the extreme dryness that prevailed throughout the majority of the western national parks, the fire hazard was greater than usual, and fire patrols and the placing of lookouts was begun earlier in the season than in normal years.

In spite of all our efforts, however, a fire which had been raging in the Blackfeet National Forest early in July spread into Glacier Park on the west side. While this fire was still burning a number of smaller fires were started by lightning. These were requiring all the energies of the park forces when the most disastrous fire of all broke out, caused by the explosion of a gasoline tank on a truck operated by logging interests not far from the foot of Lake McDonald. A high wind blowing at the time spread the flames, which for a short period threatened to get beyond control and seriously damage the park. All the resources of the park were used to the utmost for nearly two months in fighting and controlling these fires. Under directions from the Secretary Assistant Director Albright (field), who is also superintendent of Yellowstone National Park, went to Glacier Park as the Secretary's representative, to assist in this emergency. He was accompanied by the chief ranger, and first assistant chief ranger of Yellowstone National Park. During the time of the fire menace 3,583 men were engaged in fighting the flames. The total cost to the Government of controlling the fires in this park during the summer was \$203,073.76.

A serious fire in Mount Rainier National Park early in the season destroyed the National Park Inn at Longmire. Although 20 small fires were started in the trees in the vicinity by flying brands and sparks, they were quickly controlled and only 25 or 30 small trees



were destroyed. During the emergency four portable fire-fighting pumps were purchased and rushed to the park. Altogether 65 persons, men and women, employees of the Government and of the public operators, battled with the fire and prevented serious disaster.

The Kaweah fire in Sequoia National Park, which started outside the park boundaries, burned approximately 70,000 acres outside the park and 15,000 within the park. Of the latter, however, only 4,000 acres of pine, fir, cedar, and black oak timber were burned, and this partly by a ground fire which left some of the larger trees. At the height of this fire over 300 men were on the line.

### SANITATION AND MEDICAL FACILITIES

Providing satisfactory sanitary facilities in the national parks and monuments is one of the most important problems with which the service has to deal. In order that the best possible results may be obtained the assistance of the Public Health Service of the Treasury Department was secured several years ago and sanitary engineers of that bureau were available to see that all possible safeguards for the public welfare in the parks and monuments were provided.

Especially important is the providing of sanitary conveniences in and the proper policing of the public camp grounds, and particular attention was given to this phase of the work last year. Other items of general sanitation work included surveys of water supplies, examinations of sewage-disposal systems, and inspection of food supplies and swimming pools. The installation of a new sewer system at the Grand Canyon was one of the outstanding sanitary achievements of the year in the parks.

In Mount Rainier, Sequoia, and Crater Lake Parks especially the sanitation problem has reached a serious stage and large expenditures will be necessary to furnish adequate facilities. Both the water-supply lines and the sewage-disposal systems were overtaxed during the season, due to the heavy travel.

Special sanitary precautions were taken at Hot Springs National Park to keep the free public bathhouse in proper condition. Inspections of the bathhouse and clinic were made frequently during the year, as well as examinations of employees of these institutions.

Mosquito control work was undertaken in Yellowstone, Yosemite, and Rocky Mountain National Parks, in the latter reservation the local community cooperating with the National Park Service in the work in the vicinity of Grand Lake. In Sequoia National Park special steps were taken to prevent houseflies and bluebottles from breeding. Larvae of the insects were collected and sent to the University of California for identification.

Hospital service at Yellowstone and Yosemite National Parks was continued, and medical service was furnished in several of the parks.

Funds for a hospital in Mesa Verde National Park were provided in the 1927 Interior Department appropriation act, the item especially providing that it was to be the Aileen Nusbaum Hospital, as a tribute to Mrs. Nusbaum, the wife of the superintendent, whose unselfish work in the park came to the personal attention of Members of Congress.

## DISTRIBUTION OF PARK LITERATURE

During the year the following editions of the rules and regulations pamphlets were printed for distribution to the public, both from Washington and through the field offices: Crater Lake National Park, 30,000; Glacier National Park, 30,000; Grand Canyon National Park, 35,000; Hot Springs National Park, 18,000; Lafayette National Park, 10,000; Lassen Volcanic National Park, 10,000; Mesa Verde National Park, 20,000; Mount Rainier National Park, 30,000; Rocky Mountain National Park, 8,000; Sequoia and General Grant National Parks, 35,000; Wind Cave National Park, 25,000; Yellowstone National Park, 35,000; Yosemite National Park, 20,000; and Zion National Park, 20,000. In addition the Yellowstone Park Transportation Co. donated \$1,212.08 for 20,000 additional copies of the Yellowstone rules and regulations, and the Hawaii Tourist Bureau reprinted and issued about 100,000 copies of the Hawaii rules and regulations. A supply of these was sent direct to the service in Washington, and the remainder distributed in Hawaii, some through the park office and the remainder through tourist agencies. In addition, 45,000 copies of a pamphlet quoting the rates and the rules and regulations for Yosemite National Park, and 24,000 copies of a similar pamphlet for Rocky Mountain National Park, were printed. An edition of 35,000 copies of the Manual for Railroad Visitors, Yellowstone National Park, for distribution at the park only, was also printed.

Editions of motorists' guides for Yellowstone, Yosemite, Glacier, Mount Rainier, and Sequoia and General Grant National Parks were issued, the total supply of 133,000 copies being distributed through the respective parks. Editions of the motorists' guides for Crater Lake and Rocky Mountain National Park issued late in the 1925 season were used during the past summer. In addition to these guides, the following other printed matter was issued through the map division of the service: 240,000 automobile wind-shield stickers for 13 national parks, 2,500 fire-warning posters, 25,000 fire-warning stickers, 1,500 copies of map showing locations of national parks and monuments, 2,000 copies of map showing railroads connecting national parks and monuments, 2,500 copies of the park-to-park highway map, 2,000 maps showing proposed park boundary revisions, and 1,000 maps of Zion National Park.

A new publication entitled "Glimpses of Our National Monuments" was printed and filled a long-felt need. Data for a new edition of this pamphlet has already been sent to the printer. In addition to general information regarding the national monument system, this pamphlet contains a statement regarding each national monument, accompanied by an illustration. An edition of 1,700 copies of the Annual Report of the Director of the National Park Service for 1925 was also printed and distributed.

Attention was given early in the year to the revision and issuance of a new edition of the National Parks Portfolio, the most popular sale publication available on the national parks. This, the fourth edition, contains information regarding 10 additional national monuments created since the publication of the third edition in 1921, and three additional pictures. According to the records of the Superin-

tendent of Documents, through whose office this publication is handled, it is sold at the rate of approximately 15 copies a day.

Two scientific manuscripts entitled "The Plants of Glacier National Park" and the "Mammals and Birds of Mount Rainier National Park," were edited and submitted to the printer before the close of the fiscal year, but are not yet available for distribution. Both of these will be sales publications, to be sold through the Superintendent of Documents.

As knowledge of the national parks spreads, and the number of visitors increases, the demand for free publications grows. Already the demand far exceeds the supply that can be printed with the funds available, and thousands of requests for pamphlets are denied each year after the supply becomes exhausted.

#### SALE OF PAY PUBLICATIONS

The superintendents of the various parks report increased sales of special sale pamphlets. These are sold through the Office of the Superintendent of Documents and placed on sale in the national parks on a consignment basis, receipts of all sales being turned over to the Superintendent of Documents. Supplies of topographic maps prepared and sold by the Geological Survey were also sent to the parks and placed on sale. Funds received from the sale of these maps were made payable direct to the Geological Survey by the park superintendents.

#### APPROPRIATIONS AND REVENUES

Congress again continued in the regular park appropriations for 1926 an item of \$40,000 to take care of emergency reconstruction and for fighting forest fires. During the year there was expended on repair of flood damage \$10,548.24. Due to a disastrous forest fire in Glacier National Park and smaller fires in a number of the other parks a total expenditure of \$71,821.36 was required for fighting forest fires. By this first deficiency act of March 3, 1926, an additional \$40,000 was appropriated to meet these emergency expenditures. As this was not quite sufficient to meet the entire emergency expenditures, \$2,369.60 was charged to the regular park appropriations.

The total appropriations to the National Park Service for the fiscal year 1926 amounted to \$3,258,409, but by exercising the strictest economy in operations the total expenditures for the year were held to \$3,219,406 or a saving of \$39,003, which entitled the Park Service to membership in the Director of Budget's 1 per cent club.

Revenues derived from the operation of national parks during the fiscal year 1926 amounted to \$818,530.72, an increase of 22 per cent over the previous 1925 high mark of revenue receipts, which amounted to \$670,920.98. It is believed this sharp increase in revenues is directly traceable to the better roads now being constructed in national parks under substantial annual appropriations. Despite the fact that automobile entrance fees in all parks were sharply reduced at the beginning of the current travel season, it is not believed that there will be a marked decrease in revenues derived from park operations because of the increasing motor travel attracted by good roads.



It is interesting to note that the revenues derived from the operation of the Crater Lake National Park were more than the appropriation and that the revenues derived from the operation of Yellowstone and Yosemite National Parks closely approached the appropriations for those parks. Eliminating the appropriation of \$1,500,000 for road construction the national park system was 50 per cent self-supporting during the fiscal year 1926.

The following table illustrates the increase in the number of visitors and revenues and the increase in annual appropriations granted by Congress since the creation of the National Park Service:

Year	Visitors, parks, and monu- ments	Auto- mobiles	Revenues <sup>1</sup>	Appropriations
1917.....	488,268	54,692	\$180,652.30	\$537,366.67
1918.....	451,661	53,966	217,330.55	530,680.00
1919.....	811,516	97,721	196,678.03	963,105.00
1920.....	1,058,455	128,074	316,877.96	907,070.76
1921.....	1,171,797	175,825	396,928.27	1,058,969.16
1922.....	1,216,490	197,105	432,964.89	1,433,220.00
1923.....	1,493,712	271,482	513,706.36	1,446,520.00
1924.....	1,670,908	315,916	663,886.32	1,822,730.00
1925.....	2,008,084	368,212	670,920.98	3,021,828.00
1926.....			818,530.72	3,283,409.00
1927.....				3,243,409.00

<sup>1</sup> After July 1, 1918, all revenues except those of Hot Springs were covered into the miscellaneous receipts of the Treasury. Before that time they were available for park development. After July 1, 1922, revenues from Hot Springs are covered into the Treasury and are no longer available for development of the park.

### EIGHTH NATIONAL PARK CONFERENCE

The Eighth National Park Conference, held in Mesa Verde National Park from October 1 to 6, 1925, was a general working conference. It was attended by the various park superintendents, the general field officers, park naturalists, and several other field officers, in addition to representatives of the Washington office. Representatives of several cooperating bureaus were also present. The two most important subjects under discussion at the conference were the expansion of educational work throughout the park system and the development of good roads under the road budget in cooperation with the Bureau of Public Roads.

So helpful have these conferences been found in the administration of the national park and monument system that another one has been called for November 2, 1926, to be held in Washington. This will give field officers an opportunity to familiarize themselves with departmental procedure and the reasons therefor.

### CONFERENCE OF CHIEF RANGERS

The first conference of chief rangers of the national parks was held in Sequoia National Park from January 15 to 19 and was attended by 20 chief rangers and other members of the service. One of the interesting features of the conference was the demonstration of the use of portable motor-driven fire-fighting pumps. Each of the chief rangers present gained much worth-while information from the discussion of the problems of the others and their solution.

### STATE PARK DEVELOPMENT

The national conference on State parks, whose permanent organization last year was reported in my 1925 annual report, held its Sixth Annual Conference at Hot Springs National Park during the week commencing June 14.

The steady and successful growth of this organization is of keen interest to the National Park Service, as the State park system, as a complement to the national park and monument system, has a very real and practical value. Prior to the development of the national conference on State parks appeals were received by the Park Service from individuals, organizations, and members of Congress advocating the availability of local scenic areas as national parks and often entailed considerable correspondence. With the growth of the State park idea, however, many of these areas have become State parks, and the service continually calls attention to the probability of State park creation in regions where the recreational areas proposed for parkhood do not meet national park requirements. Together these two classes of parks form a system of educational and recreational areas unparalleled in history.

### NATIONAL CAPITAL PARK AND PLANNING COMMISSION ACTIVITIES

During the year Congress reorganized the National Capital Park Commission, extending its scope and increasing its membership. Under this new act, which changed the name to National Capital Park and Planning Commission, the Director of the National Park Service retained membership in the Commission. The increased duties of the commission, though extremely pleasant and interesting, have added to the work of its members. In addition to my membership on the National Capital Park and Planning Commission, the assistant director of the service is a member of the Coordinating Commission of the National Capital Park and Planning Commission, which work has added considerably to the duties of his position.

### INTERBUREAU COOPERATION

In this report I wish to acknowledge the hearty cooperation which this service has received from other Government bureaus, especially in scientific and technical work. Mention has been made elsewhere of the work of the Bureau of Public Roads, the Public Health Service, the Bureau of Entomology, the Bureau of Animal Industry, and the Bureau of Fisheries. Other bureaus that have given the service valuable assistance are the Bureau of Biological Survey, the Forest Service, and the Weather Bureau, in addition to the General Land Office and the United States Geological Survey of our own department.

The assistance given us by all these bureaus makes for much greater economy and efficiency in Government work, since it obviates the necessity of the National Park Service maintaining trained personnel along the lines handled by these offices.

## GIFTS TO THE NATIONAL PARK AND MONUMENT SYSTEM

The interest of conservationists, park visitors, and the public generally is shown each year by many donations made to the parks and monuments. Congress several years ago granted authority for acceptance of such gifts. So long is the list of individual gifts and donors that it is impracticable to give them all here, but to each and every one the service hereby extends its keen appreciation on behalf of the American people, to whom the parks belong and who derive the benefit from them.

## EXHIBIT AT NATIONAL SESQUICENTENNIAL EXPOSITION

The National Park Service portion of the department's exhibit at the National Sesquicentennial Exposition now being held in Philadelphia has been a success from every point of view, and its success has amply rewarded the members of the committee who devoted so much time and energy to securing a worthwhile exhibit.

The principal features of the exhibit are three large model panoramas, each viewed from separate alcoves, depicting the Grand Canyon of the Colorado, Old Faithful Geyser in Yellowstone National Park, and the firepit of Kilauea in the Hawaii National Park. The Grand Canyon model, which is viewed from the center alcove, is 30 feet in width, and the other two 20 feet each. Special attention was given to lighting effects. The mechanical end of the exhibit, such as regulating the water of the geyser and making the fiery lake of lava, was worked out in the laboratories of the Department of the Interior after considerable experimentation.

On the walls of the alcoves are hung 35 interesting colored views of national-park scenes, approximately 30 by 40 inches in size. Thirty of these are enlargements of aerial photographs taken by Capt. A. W. Stevens and Lieut. John A. Macready, of the United States Army Air Service, in cooperation with the National Park Service.

## THE YEAR IN THE PARKS

The following is a summary of the work accomplished in the national parks and national monuments during the past year. This summary is purposely made brief, as the annual reports of the various superintendents have been printed in full in Appendix C:

### YELLOWSTONE NATIONAL PARK, WYO.

I was fortunate in being able to reach Yellowstone Park on June 20, in time for the formal opening ceremonies which were held this year at the north entrance arch at Gardiner, the terminus of the park branch of the Northern Pacific Railway. These ceremonies, in which I had been asked to participate, were arranged in cooperation with rotary clubs of Montana and the Northern Pacific Railway. A large crowd was present and the affair was very interesting, colorful, and altogether enjoyable.



While the formal opening was the one receiving the attention of the press, owing to an extraordinary early spring campers with their own cars and equipment had been visiting the park ever since May 16. Even the high passes in Wyoming, which usually are not cleared of snow until nearly the middle of June, this year admitted tourists before the first of that month. There had been a very open winter in most of the Western States, and in the Yellowstone region little snow fell after December 1, 1925, thus causing an abnormal deficiency in moisture. This brought the advantage of early park opening to visitors, but likewise was responsible for excessive dust conditions and bad fire hazards during the summer.

#### ANOTHER RECORD SEASON

The month of June had not yet closed when it became apparent that the season of 1926 in the Yellowstone was to be unprecedented in number of visitors entertained. It was indeed a record breaker. There was an increase of 33,525 visitors over 1925; 187,807 this year as compared with 154,282 last year. There was a very slight decrease in travel by rail, owing probably to the fact that few conventions were held in the West during the season, but there was an increase of 36,487 in the number of visitors traveling in their own cars. The total number of motorists was 144,729.

When we stop to consider that each of Yellowstone's 125,000 motor campers camped several times in the park, the problem of the National Park Service in providing camp grounds, water, sewage, and garbage disposal, tables, wood, etc., can be more fully appreciated. Many motorists, of course, enjoyed the facilities of the hotels and lodges, but fully 125,000 preferred to pitch their tents and use their own camping equipment. This means that the equivalent of 400,000 individuals used the various park camp grounds in the course of the summer.

#### BUILDING FOR THE CAMPER

During six seasons we have been building camp grounds and equipping them with modern sanitary facilities and installing water systems, tables, comfort stations, and other necessary equipment. Much progress was made this year, new sewer systems and disposal tanks being constructed in the great Fishing Bridge automobile camp, and in the new and beautiful motorists' camp at Madison Junction at the confluence of the Gibbon and Firehole Rivers.

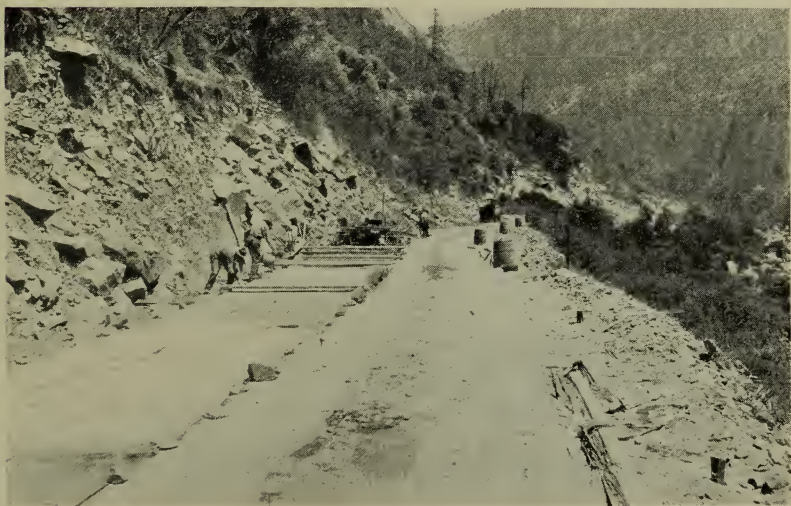
All other camp grounds were extended and improved, but we did not satisfactorily meet the needs of all of the campers at the height of the season, and next year these facilities for campers must be greatly enlarged.

#### IMPROVEMENTS IN PUBLIC UTILITIES

The public utilities of the park made many notable improvements in their properties. The machine shops and other structures, forming a part of the enormous plant of the Yellowstone Park Transportation Co., near Gardiner, were completed and placed in use early in the year. Planting and care of the grounds will finish this splendid improvement of the park's operating facilities.



NEW RANGER STATION  
YOSEMITE NATIONAL PARK



PAVING WORK IN PROGRESS ON THE EL PORTAL ROAD  
YOSEMITE NATIONAL PARK





NEW STONE-FACED CONCRETE BRIDGE OVER PARADISE VALLEY. NATIVE  
STONE USED IN CONSTRUCTION  
MOUNT RAINIER NATIONAL PARK



NEW GRAND VIEW AUTOMOBILE ROAD  
GRAND CANYON NATIONAL PARK



At Lake Yellowstone, the Yellowstone Park Camps Co. rebuilt and vastly enlarged its Lake Lodge. Two wings of huge proportions were built one on each side of the old lodge central building; one for dining rooms and kitchen, the other for amusements and baths. This reconstruction and extension of the Lake Lodge leaves only the Old Faithful Lodge to be rebuilt and this project has been included in the budget for next year. The Camps Co. also built adequate and attractive structures at the Fishing Bridge, Old Faithful, and West Thumb camping grounds for the housing of lunch room, cafeteria, and delicatessen operations. Cabins for the housekeeping unit in the Mammoth camping grounds, and tents for the similar units at four camps in the upper park were installed as a part of our program for installation of a new service for the camper.

The development of the housekeeping units in connection with lunch rooms and cafeterias gives Yellowstone Park four distinct types of service—the hotel, the lodge, the housekeeping cabin where the visitor can cook his own meals or use the cafeteria, and the free camping grounds already discussed, where the motorist can use his own supplies and equipment.

Improvements have been made along several lines by the stores, curio shops, and picture shops, but space precludes a detailed account of these betterments.

Medical service was conducted on a high plane of professional efficiency, and we are now arranging to place this service on a permanent basis through execution of a 10-year franchise.

As to service by the public utilities of the park, changes in personnel and adjustments of policy paved the way for the best service to the public that the park has ever furnished, and contributed greatly toward the unprecedented success of the summer's operations. Our own service in the public camp grounds was excellent, and the rangers, by their courtesy, tact, kindness, and efficiency, impressed every visitor to the park that our department was interested in them and wanted their trips to be successful and enjoyable.

#### ROADS AND TRAILS IN GOOD CONDITION

Roads, despite the dry summer, and aside from the dust nuisance, were maintained in good condition, and the engineering department of the park is entitled to great credit for the good showing made on the roads under the adverse conditions with which it was confronted. Trails were placed in better condition than ever before by the ranger department. This efficient ranger force also controlled the fire situation so well that no lightning or other fire burned more than an acre.

#### FAMOUS PEOPLE AMONG THE SEASON'S VISITORS

Yellowstone National Park, always fortunate in having among its thousands of visitors many men and women distinguished in business and professional life and in the public service, was honored this year more than usual by visitors of great prominence, including the Secretary of the Interior, the Crown Prince and Crown Princess of Sweden, the governors of 19 States and the Territory of

Hawaii, seven Members of the United States Senate, an equal number of Members of the House of Representatives, and the presidents of five great railroad systems. The interest which these influential visitors have taken in the Yellowstone and other parks is very inspiring, and it is especially pleasing to know that these men and women who are so competent to pass judgment on large Government and business operations were very favorably impressed with the manner in which the department is conducting the national parks.

#### PRIVATE AID IN LANDSCAPE BETTERMENT

Faith in our policies, plans, and personnel prompted a very public-spirited and generous business man of New York to offer, two years ago, his aid in accomplishing certain very important landscape work in Yellowstone Park. He authorized the cleaning up of the roadsides of the park which had been littered years ago by timber and brush cut from the rights of way, and which were very unsightly and always the subject of unfavorable criticism. At first he had experiments conducted to ascertain costs and scenic effects, and upon deciding to proceed with the work on a large scale, asked the superintendent to submit to him projects each embracing approximately a season's possible accomplishment. Several of these projects have received his approval and since September, 1924, approximately \$16,000 has been appropriated by this fine friend of the park, and nearly \$13,000 has been expended in roadside clean-up between Mammoth Hot Springs and Norris Geyser Basin and along the shore of Lake Yellowstone. The work now in progress is along the Grand Canyon-Lake Yellowstone Road and along the Artist Point branch road. The most difficult work is already completed, although it will be several years before the smaller projects are finished. Our benefactor visited several national parks this past summer in addition to the Yellowstone and expressed great satisfaction with the work accomplished under his proposals. He has authorized the continuance of this landscape activity and has also offered to assist in similar work in Crater Lake National Park. His interest in the park has also prompted him to discuss aid to the national parks along other lines which it appears Congress will be unlikely to undertake or even consider.

One must see the Yellowstone roadside improvement to appreciate what this work means to a park. The effects obtained are almost unbelievable. The mere removal of the litter constitutes a transformation, but after the snow of a winter and the following summer's sun have done their part, one can hardly realize that the highway has not been removed to a new location. The grass and flowers among the trees and along the roads present a true park atmosphere that did not exist before this work was undertaken.

Aside from the beautiful effects of the roadside landscape work, this new activity has profoundly influenced both park employees and the traveling public, and we have noted that much greater care is being taken in Yellowstone Park to avoid throwing papers, cans, and other débris along the highways. Road foremen are especially interested in keeping the roadsides clean, and it is no longer difficult to make them establish borrow pits for their maintenance gravel away from the traveled routes.

Other landscape activity in the Yellowstone that deserves special mention this year is the continuance of the work of removing the telephone lines from the roadsides. The National Park Service and the Yellowstone Park Hotel Co. cooperating have now removed all lines between the park headquarters at Mammoth Hot Springs and Lake Hotel via Norris Geyser Basin and the Canyon of the Yellowstone from the main highways to swaths in the timber and to open spaces a considerable distance away. This year's work is confined to completing the work between Norris Basin and Old Faithful. Much work of this character will remain to be done in the future and will be carried on as heavy maintenance work, because nearly all of our old lines are in poor condition and require new poles and cross arms.

All of this work is approved by our landscape engineering division which also devoted much attention to the roadside clean-up projects, and to vista cutting in connection with them, especially at Twin Lakes.

#### BUILDING NEW ROADS AND BETTERING OLD ONES

Closely allied to these landscape improvements is the relocation and betterment of the highways of Yellowstone Park. No absolutely new products are under way and, with the possible exception of a road into the Bechler River region, I doubt if any new roads will be built in even the remote future. We are even asking Congress to prohibit road construction in the Upper Yellowstone country and in the Teton Mountains, should these regions be added to the park.

On the other hand, Yellowstone's present road system needs much revision and improvement, and some adequate dust palliative must be found or riding over these highways in midsummer will be a miserable experience. During the past summer there were times when the impalpable dust hid the road sides from view and impaired greatly the pleasure of touring in the great playground. Sprinkling was carried on as usual but its effects on dust quickly disappeared.

Road projects carried on this year included the completion of the Lake Shore Drive between West Thumb of Lake Yellowstone and Bridge Bay, built to eliminate the heaviest grade on the Grand Loop System, 18 per cent; the Inspiration Point Road, a new highway replacing the narrow road along the west side of the Yellowstone Canyon; and certain new sections of road in the Tower Falls district, notably a mile of new highway to Petrified Tree. Projects begun since my last report were the Firehole cut-off, a new highway along the Firehole River between Madison Junction and the Firehole Cascades, the reconstruction of 9 miles of the Cody road between Sylvan Lake and Turbid Lake where the highway is now narrow and dangerous on account of many curves, and a small section of new road in the vicinity of the Buffalo Ranch made necessary on account of extending the hay fields in that part of the park.

The new section of road on the Firehole River is being constructed on the highest standards of any used in the National Park Service, but the beauty of the canyon justifies the very great attention that is being given to details of wall and fill construction.



## NATURE TRAILS AND GUIDES

Very gratifying progress was made in the extension of our nature educational work in Yellowstone Park this year. In the first place an accomplishment of great importance was completed before the season opened. This was the preparation of the ranger-naturalist's manual for the use of rangers, ranger naturalists, and lecturers in the park. This volume was compiled under the direction of J. E. Haynes, who is serving as acting director of the Yellowstone Park Museum without any compensation other than the satisfaction of doing well a fine public service. The manual has proved to be invaluable and now constitutes one of the important volumes in the literature of Yellowstone Park. A similar manual covering the history of the park is being prepared under the supervision of Chief Naturalist A. F. Hall.

During the season ranger naturalists were stationed at Mammoth Hot Springs, Yellowstone Lake, Old Faithful, Madison Junction, and Camp Roosevelt. These men were under the general supervision of the chief ranger, but the lecture, guiding, and information service was conducted with the advice of Mr. Haynes and Dr. H. S. Conard, the latter a ranger naturalist of wide experience in the teaching of general science. The total number of visitors who came in contact with the ranger naturalists was 88,067, as compared with 83,424 during the 1925 season. New features of this service included regular lectures on geology at Old Faithful, a talk on animal life, fish, and fishing each night at the Lake Hotel and the Lake Lodge, and personally conducted excursions through the fish hatchery each morning, informal talks on bears at Old Faithful and Canyon, and extended nature hikes over the trails at Mammoth Hot Springs.

All of the features inaugurated this year, as well as those inaugurated in past years, were heavily patronized and greatly enjoyed by the traveling public.

At the Old Faithful center of interest three nature trails were constructed, one over Geyser Hill, another to Black Sand Basin, and a third, a purely natural history trail, through the woods east of Firehole River. These trails have been well marked, full descriptions being given of every geyser and hot spring and attention being called to various species of trees, flowers, and other interesting natural objects. With these trails it will be possible to give many more park visitors a thorough understanding of the natural features of the geyser basin than ever would have been practicable with the two ranger naturalists available at that point. I regard the nature, information, and educational work of Chief Naturalist Hall and the rangers in Yellowstone Park this year as worthy of great commendation.

## LEGISLATION AFFECTING BOUNDARY ADJUSTMENTS

I had hoped to be able to record in this report the fact that the Yellowstone boundary revision bill had been enacted into law and that the Teton Mountains had been made a part of Yellowstone National Park. For a time last winter it appeared that this very important legislation would receive the approval of Congress. Very

favorable hearings were held by both the Senate and House Public Lands Committees during the months of March and April, but the revival of the plan to place an irrigation reservoir in the Bechler River Basin in the southwestern corner of the park stopped the progress of the measure.

This irrigation proposal is not exactly the same as the one which occupied so much of our time in 1920 and 1921. At that time it was proposed to build reservoirs in the park. This time the so-called Smith amendment proposes to remove approximately 12,000 acres from the control of the park and make this region available for a reservoir. Advantage was taken of the fact that the Yellowstone boundary adjustment bill was pending and it was proposed to add the Smith amendment to this bill. Subsequently the Senate passed a resolution providing for the visit of a subcommittee of the Public Lands Committee to the Bechler River Basin and an appropriation of \$3,500 was made to cover the expenses of the trip. On August 17, Chairman Stanfield and several members of the committee visited the proposed reservoir site. As I write this report the Senate committee has not rendered its report.

The National Park Service is, of course, opposed to the delimitation of the park for any commercial purpose. I believe it would be a bad precedent, and although this proposal will delay the final consideration of the bill to adjust the boundaries of the park along natural lines and give the Teton Mountains a park status, nevertheless it is important that the proposed amendment be thoroughly considered at this time and, if possible, the question of whether park lands shall be used for commercial purposes settled in favor of the principle of complete conservation of the park territory for all time to come.

#### GAME PRESERVE LEGISLATION

On March 26, 1926, the President approved Public No. 295, "An act to make additions to the Absaroka and Gallatin National Forests and the Yellowstone National Park, and to improve and extend the winter feeding facilities of the elk, antelope, and other game animals in Yellowstone National Park and adjacent lands, and for other purposes." This legislation paves the way for establishing adequate winter feeding grounds for park animals that stray beyond the north boundary. Public-spirited citizens have subscribed a fund for the acquisition of ranch lands in the Yellowstone Valley north of the park, these to be turned over to the Federal Government for the cultivation of hay and for winter feeding grounds. The W. M. Hoppe ranch, of approximately 1,000 acres, was purchased in November, 1925, and has since been available for the ranging of elk and antelope. Other lands will be purchased this winter but friends of the park who are aiding in this enterprise believe that Federal appropriations should be forthcoming to aid in the acquisition of this property, and it is likely that further legislation to this end will be discussed in the coming session of Congress. The lands needed to complete this project will cost approximately \$250,000, one-half of which will be subscribed privately; 134.74 tons of hay were raised on the Hoppe ranch this year.

## YOSEMITE NATIONAL PARK, CALIF.

Again Yosemite National Park experienced the greatest travel year in its history, with a total of 274,209 visitors. August was the biggest month of the season from all standpoints. Such heavy travel at the end of the regular tourist season is an indication of the travel that may be expected next year. In fact, the indications are that the travel during the summer months is going to be so heavy that it will be limited only by the ability of the park operators and the Government to take care of it properly. One of the serious problems now facing us, therefore, is the necessary expansion of existing facilities to meet the growing demand.

### NEW ALL-YEAR ROAD

The principal factor in the heavy increase of visitors to the park at the end of the past season was the opening and dedication of the new all-year road up the Merced River Canyon on July 31. This highway, built by the State of California, makes the park accessible every day in the year, whereas in the past during the period from late fall to early spring it has been practically closed to motorists. The completion of this road makes imperative the construction of additional roads and trails to enable visitors to go beyond Yosemite Valley, where the heavy congestion exists, to the outlying mountain areas.

The completion of the all-year road coincided with the seventy-fifth anniversary of the discovery of Yosemite Valley and to celebrate both an interesting pageant, historical in nature, was staged in a natural amphitheater near the point where the first white men entered the valley.

### DEDICATION OF INTERDENOMINATIONAL CHURCH AND OF FISH HATCHERY

At the time of the diamond jubilee celebration the site of the new chapel, sponsored and to be used for services by all recognized denominations, was dedicated. Another dedication made at this time was that of the site for the new fish hatchery, which is to be built by the California Fish and Game Commission under a contract recently entered into with the department. Governor Richardson assisted in the dedication of the hatchery site.

### GENERAL ROAD WORK

The V. R. Dennis Construction Co. carried on rectification work on the El Portal grade during the winter and started paving about June 1 on the 5 miles of the El Portal Road which required hydraulic concrete rather than asphaltic concrete. On account of breakdowns and unavoidable delays this paving work was not completed at the time the State finished its work on July 31, and the road was opened, so that the heavy traffic had to be confined, as far as possible, to the night hours. In spite of the inconvenience and delays made necessary by the paving operations, travel to the park increased more than 50 per cent and indicates fairly well the great travel that will come to the park over this new road next year.



Surveys have been completed and specifications are now being written with the intention of advertising for bids for a new contract with which to finish the paving work on the floor of Yosemite Valley. The Bureau of Public Roads is also making a survey of the Big Oak Flat Road and the lower part of the Tioga Road. The new location provides for a junction of the Big Oak Flat Road and the Tioga Road at Crane Flat.

#### NEW YOSEMITE HOTEL UNDER CONSTRUCTION

The Yosemite Park & Curry Co. started the construction of the new Yosemite Hotel the latter part of May. The building, together with its furnishings, is to cost approximately \$800,000. The entire building will be fireproof with the exception of the dining room, which is to be log construction. The general construction of the building is to be steel frame, steel floor joist, and concrete floors, steel frame roof with concrete slab and wood shakes, the exterior walls to be native granite and concrete, the concrete to be formed in rough form lumber and stained to imitate wood.

The company is also studying plans for a new merchandise store to be erected next spring in the new Yosemite village, and also plans for the rebuilding of Yosemite Lodge.

The Yosemite Park & Curry Co., through arrangements made with the Standard Oil Co., have constructed three modern oil and gasoline stations during the summer, one at Yosemite Lodge, one at Chinquapin on the Wawona Road, and one at Tuolumne Meadows on the Tioga Road; and the usual Standard Oil service was given at all of these stations. There is air and water service at all of the stations, all are electric lighted, and modern comfort stations have been provided. In addition to these three stations the old station at the garage at Yosemite village and the one at Camp Curry were also operated by the Standard Oil Co. during the season. The arrangement between the Yosemite Park & Curry Co. and the Standard Oil Co. for providing for this service has resulted in a decrease of approximately 3 cents per gallon at all of these stations compared with the prices of last year.

#### GENERAL IMPROVEMENTS

During the year the service improved the grounds and the fire-protection service in the new Yosemite village, and also cleaned up the Happy Isles area by the removal of the old unsightly power house and machinery. Two stone pillars marking the entrance to the park on the El Portal Road were also removed. The erection of signs on the trails in the park and the designing of new entrance gates are now receiving attention. A pleasing landscape treatment was also given the Grizzly Giant Tree in the Mariposa Grove. This affords better protection to the tree by limiting pedestrian and automobile traffic to an adequate distance from the base of the tree by means of split redwood posts extending above ground about 2 feet.

#### NEW MUSEUM OPENED

The new museum building, constructed by the American Association of Museums from funds contributed by the Laura Spelman Rockefeller Memorial Fund, was opened to the public on May 29,

and since the opening date thousands of visitors have enjoyed its many exhibits. The museum attendance for the fiscal year amounted to 70,149, of which more than half were in the month of June alone. The branch museum at Glacier Point entertained 11,890 visitors. Nature guide trips were taken by 9,151 visitors, and lectures and camp-fire talks were given to approximately 57,000 people during the year. The total number served amounted to 143,461 visitors. These figures show the wonderful interest that this work has for those visiting the park.

#### PROPOSED CHANGE IN PARK BOUNDARIES STUDIED

During the latter part of July, the President's coordinating commission visited the Yosemite National Park to go over the areas in the southern and eastern sections which belong to the Forest Service, with a view to making recommendations for extending the boundaries of the park so as to include at least part of the area that was originally within the park and later thrown out. This commission made an eight-day pack-train trip and, following that, held meetings in San Francisco to give the various interests an opportunity to be heard on the proposition. A tentative recommendation was submitted, which recommends the inclusion of some 30,000 additional acres to the park boundary in that section.

Time would not permit of a study of the boundary change in the western section of the park. It has been suggested that a portion that is practically all in private ownership be thrown out of the park. This matter is to be handled by the National Park Service officials and the Forest Service some time this fall with the idea of agreeing upon a new boundary line in this section.

#### ILLNESS OF SUPERINTENDENT

I regret to report the serious illness of W. B. Lewis, who last spring completed 10 years' service as superintendent of the park. During this time, and especially during the crucial period of reorganization of park utilities, Superintendent Lewis devoted all his energies to the administration of the park to such an extent that he suffered a breakdown early in the season. After several months' rest, however, he is recuperating rapidly, and it is hoped that he will be back at his desk, fully recovered, by the first of the year.

During July and August, when travel to the park was heaviest and special parties were in the park I detailed A. E. Demaray, assistant in operations and public relations in the Washington office, to Yosemite National Park, and under his supervision the park made an excellent summer record.

#### GRAND CANYON NATIONAL PARK, ARIZ.

Considering the fact that all large conventions were held this year in the East, the slight increase in travel was gratifying. It is doubtful if travel figures in any other national park are affected as much by travel incidental to western conventions as is Grand Canyon National Park. Important achievements of the year were improvements in sanitation, construction of delicatessen and housekeeping cottages on new auto camp ground, reconstruction of Tip-off and

Granite Gorge sections of Kaibab Trail, water development on North Rim, the new Hopi footpath, and inauguration of nature guide service to visitors.

#### NEW SEWAGE-PURIFICATION PLANT

The comprehensive sewage-disposal plant authorized in fiscal year 1926 was placed in operation May 28 and the unsightly and odorous ditch along the railroad is no more. Through a cooperative arrangement with the utilities, effluent from treatment plant is reclaimed for use in generating steam, irrigation, and operation of flush toilets in public comfort stations. This arrangement gives the National Park Service 10 per cent of reclaimed effluent, which permits the use of flush toilets on camp grounds. All water used at the canyon is hauled 100 miles in tank cars, which makes it expensive, and but for this arrangement we could not hope to install flush toilets in public camps.

#### NEW INCINERATOR

The incinerator constructed by the utilities was placed in operation August 21. It was designed to dispose of garbage for the entire community. The Park Service contributes an amount of labor in operating the plant proportionate to the amount of garbage produced in the service areas.

Before the incinerator was put in operation all garbage produced at Grand Canyon village was placed on flat cars, hauled some distance outside the park, and dumped along the railroad. This method of disposal was not only offensive to the community but made an unpleasant condition outside the park, and it is gratifying that this condition has been remedied for all time.

A can-mashing machine and an arrangement for cleansing garbage cans with steam were also installed at the incinerator by the utilities.

#### DELICATESSEN AND HOUSEKEEPING COTTAGES ON NEW AUTO CAMP GROUND

Since travel by automobile is increasing much faster than rail travel, it is especially gratifying to record additional facilities for campers' comfort and enjoyment. Moreover, unless everything possible is done for motor campers we are not serving the class of people for whom the parks are primarily intended, those of moderate means.

On the new camp grounds the Fred Harvey Co. has practically completed a very attractive building that will serve as delicatessen and lounge room for the use of auto campers. Surrounding this building are 20 housekeeping cottages, and this number will be increased as demand requires. Cooked food of all sorts may be purchased in bulk and consumed at tables placed outside or the food may be carried to housekeeping cottages. The entire layout is made as flexible as possible in order that patrons of this unit may pay for exactly what they get and no more.

#### TRAILS

Grand Canyon is essentially a trail park in that the trail system is as important as the roads. Since trails already make feasible



short trips into the canyon, the most important task remaining is rebuilding the Kaibab Trail from rim to rim. Last year the new Yaki Point section of the Kaibab Trail was completed, as was part of the trail through the Granite Gorge of Bright Angel Creek. This year the Tip-off section of the Kaibab Trail was rebuilt and the Granite Gorge section was completed. Eleven miles of this cross-canyon trail have been rebuilt to highest standards, and there remain 12 miles to be rebuilt or relocated. Late this fall a crew will be put on this work and the trail will be completed to snow line on the North Rim this winter. Next summer the entire trail will be completed.

A comparatively inexpensive trail was built across Muav Saddle to Powell Plateau. This trail was constructed primarily for forest-fire protection, but when saddle-animal travel justifies it the trail can be widened and improved, as it was carefully located with that idea in view.

The Yavapai Point footpath has proven so popular that a similar footpath is now being built in the other direction to Hopi Point. It is estimated that footpaths are used by over 95 per cent of visitors to the park.

#### WATER DEVELOPMENT ON NORTH RIM

Lack of water has seriously handicapped auto campers on the North Rim and for that reason their number has been comparatively limited. Funds authorized for fiscal year 1927 will remedy this condition. Pure spring water from two springs will be collected and pumped to a tank on the highest part of Bright Angel Point and distributed to the camp grounds by gravity. There should be a great influx of auto campers when this installation becomes known.

#### BEETLE INFESTATION ON NORTH RIM

It is extremely gratifying that, thanks to Congress for adequate funds and the splendid cooperation of the Bureau of Entomology of the Department of Agriculture, the insect infestation on the North Rim is at an end and this magnificent forest has been saved with comparatively small loss.

#### REVISION OF PARK BOUNDARIES NECESSARY

Funds are available for the Grand Canyon Village-Grand View section on the Desert View Road. Before the Grand View-Desert View section can be built it will be necessary to add a small area to the park immediately south of the Buggeln ranch. Before a road can be built to Cape Solitude it will be necessary to add 8 square miles to the southeastern boundary. Similarly the North Rim country can not logically be developed unless the northern boundary is revised. In the latter case it is also necessary to preserve a representative section of the Kaibab Forest in its natural state for posterity and to provide a sanctuary for wild life providing both summer and winter range for deer. The revision as recommended by the coordinating commission is necessary if Grand Canyon National Park is to yield the greatest benefits to its owners, the people of the United States.

## NECESSARY APPROACH ROADS

The State of Utah has plans under way to modernize the approach road to the North Rim. Much has been said and written about the south entrance road and despite the fact that its poor condition is more apparent than ever, nothing is being done about it. The condition of this road not only injures the park and northern Arizona, but keeps thousands of motorists out of the State with a resultant loss in revenue to its citizens.

At the last session of Congress, \$100,000 was appropriated for a bridge near Lee's Ferry on the condition that a similar amount be appropriated by the State of Arizona. It is hoped the State legislature will appropriate the money to make this deserving project possible. It is felt that increased travel to Arizona will amply justify such procedure.

## INAUGURATION OF NATURE GUIDE SERVICE

Camp fire lectures and nature guide trips were inaugurated early in July. Despite the lack of proper personnel and a museum building, the first season's work in this line was a success. Six thousand one hundred and ninety-six people took advantage of this service and it is hoped funds will be authorized at next session of Congress to enlarge the field of activities.

## ROCKY MOUNTAIN NATIONAL PARK, COLO.

There was an unusual amount of snow on the Fall River Road this spring, and much difficulty was encountered from snow slides, but for the third time in the six years that the road has been in service, it was open to travel on June 15, the official opening date. A steam shovel with a special snow dipper was used on the eastern side of Fall River Pass and in a month cleared a path 14 feet in width, through 3 miles of continuous snowdrifts to the Pass, whose elevation is 11,797 feet. The maximum depth of snow on the roadway was 21½ feet. The shovel removed about 70,000 cubic yards of snow and the wide pathway cleared made the condition of the road better for early travel than it has been in previous seasons. The steam shovel had all that it could do to clear the road on the eastern side of the pass, and in order to have the road open on schedule time, a crew of about 40 men, with teams, was started from Grand Lake on May 15 and opened up the western side of the road, mostly by hand shoveling. It is estimated that the total amount of snow removed was 119,000 cubic yards. One snow slide ran ten times after the work was begun.

## ROAD AND TRAIL CONSTRUCTION

The Bureau of Public Roads, under interdepartmental agreement, has undertaken supervision of the major road projects in this park, and its cooperation has been of the highest order. The High-drive project, now in progress, is the most important to road improvement that has been undertaken by the National Park Service in the park since its creation. Other important road work was also carried on during the past season.

The construction and reconstruction of the park-road system, which has now begun, will be carried on as rapidly as funds are available, as improvement of the roads constitutes one of the greatest needs of the park.

The past year has seen a greater improvement in the trail system of the park than has been possible in any previous year. A new trail, about 3 miles in length, is nearing completion in the Wild Basin district. This trail forms a connection between the trail to Pear Lake and the trail to Bluebird Lake. It increases the accessibility of points in Wild Basin, helps to unite the trail system in that region, and offers an attractive circle trip. Especially important was the reconstruction of trails in the vicinity of Fern Lake.

There is an excellent opportunity to make this park notable for its trail trips. Much of the park area will never be accessible to automobile roads, and the continued development of a sufficient and satisfactory trail system is of great importance, in order that the park may be of greater service to the public.

#### SHELTERS FOR VISITORS

For the comfort and safety of the 3,000 or more people who annually climb Longs Peak where sudden storms are not infrequent two shelters are being constructed. One is a masonry shelter cabin on the Boulder Field, at the end of the horse trail on the slopes of Longs Peak at an elevation of about 12,700 feet. The other storm shelter of masonry construction is being built at the Keyhole on the route to Longs Peak, at an elevation of 13,200 feet. This shelter is the gift of Mr. F. O. Vaille, of Denver. These buildings present unusual problems in construction on account of their elevation and remoteness from automobile roads.

#### CAMP GROUNDS

There are now four camp grounds available to the public on the eastern side of the park, and their road development has been practically completed this year. As soon as water supply and sanitation have been completed, the needs of campers on the eastern side of the park will have been supplied.

#### ELIMINATION OF PRIVATE HOLDINGS

At the suggestion of the Appropriations Committee, a bill was submitted to Congress, and approved on June 9, setting back the eastern park boundary to exclude about 12,100 acres, of which about 10,700 acres are in private ownership and 600 acres are State school lands. Eighty acres were also eliminated on the north boundary of the park to permit the construction of a reservoir at Mirror Lake, which was partly within and partly outside of the previous park boundary.

#### MOUNT RAINIER NATIONAL PARK, WASH.

The year has seen a good start toward the development of facilities designed to provide better service for visitors in Mount Rainier



National Park. Construction of four concrete and masonry bridges and two rustic log bridges, and the reconstruction and surfacing with crushed rock of 12 miles of the Nisqually Road; letting of a contract for the construction and surfacing of 10 miles of the West Side Highway; completion of the location survey of the Yakima Park Highway; and the extension and improvement of the Longmire Springs and Paradise Valley public auto camps were the year's achievements.

#### GENERAL PLAN OF DEVELOPMENT

Plans were made by the landscape engineers for the general development of the Longmire Springs area. These include carefully selected sites for administrative, residential, and utility groups and provide for future growth and expansion as well as present needs. A start was made toward carrying out the general development by the construction of an employee's cottage on the residential site and an equipment storage shed on the utility site. Housing plans call for 10 or more cottages for the residential unit and eight or more buildings for the utility group. As yet nothing has been done on the administrative site, but it is hoped that funds will be available next year for the construction of a much-needed park headquarters building.

#### TRAIL SYSTEM

There is a total of 241 miles of trails in the park, but due to insufficient funds it has not been possible to maintain more than about 175 miles of the system for the past several years. Many of the trails were located and constructed hurriedly without adequate funds, in order to open up forest areas for fire patrol and other protection purposes. As a result many sections of the trails were badly located with reference to grade and damage due to washouts, etc., and little or no effort was made to develop the scenic points. Many of the present trails should be reconstructed and improved, and a few new ones should be constructed to make accessible the forest areas and scenic points for protection purposes and for the use of visitors.

#### NEEDS OF THE PARK

The need for more and better roads will, it is hoped, be taken care of by such future appropriations as may be necessary to complete the park road system, which is designed to connect with State highways leading up to the four park entrances. Not only is the park road system necessary for making the scenic attractions accessible, but it is also required as a link in the chain of State highways connecting the various sections of the State.

The housing accommodations for employees and Government equipment are wholly deficient. Suitable quarters are needed in order that competent employees may be retained in the service, and shelter for expensive motor equipment and other machinery is required as a matter of economy.

Modern sanitary facilities, including ample supplies of drinking water and proper sewage and garbage disposal plants, are essential for the protection of the health of park employees and visitors.

Shelter cabins to provide shelter for rangers on patrol duty and for use of visitors who make the knapsack and saddle-horse trips are needed at several points along the trails.

Additional free camping facilities are needed at each of the four accessible areas of the park.

### GLACIER NATIONAL PARK, MONT.

Customary administrative activities in Glacier National Park during the season of 1926 were overshadowed by the imperative necessity of fighting forest fires which proved to be the worst in the history of the National Park Service. A phenomenally mild winter, followed by a dry and early spring, made the forests highly inflammable by the 1st of May. The fires swept over some 50,000 acres gross on the west side of the park, chiefly along the North Fork River, and only the most vigorous efforts prevented the destruction of the beautiful forests of Lake McDonald. During a period of 10 days in August over 700 fires fighters, supplied from 20 camps, were engaged on the fire lines. The task of organizing this large force for effective work, and of feeding and equipping it, completely absorbed the energies of the superintendent and the park staff during practically the entire season.

Asst. Director H. M. Albright (field) was sent to the park to take general charge during the emergency and spent most of August there. Assistant Superintendent Allen, of Rocky Mountain Park, Associate Landscape Engineer T. C. Vint, Chief Ranger Woodring, of Yellowstone Park, and his assistant, Chief Harry Trischman, these last two having accompanied Mr. Albright, also assisted.

The density of Glacier Park's west slope forests and their high inflammability when dried by summer sun and winds proves this park to have a greater fire hazard than any other in the system. For two successive years the fire-fighting expenses in Glacier alone have so greatly exceeded the emergency allotment for the entire Park Service as to cripple regular park activities until deficiency appropriations could be secured from Congress to reimburse its regular appropriation.

### VISITORS

In spite of unfavorable publicity caused by the fire situation, the travel to Glacier showed an encouraging increase over 1924, and was only slightly less than in 1925 when an abnormal increase resulted from the stop-overs of large delegations en route to Pacific coast conventions. There was a slight increase in motor visitors who patronized the two automobile camp grounds on each side of the park.

### ACCOMMODATIONS

Hotel and chalet accommodations proved adequate and maintained their high standard of service to the end of the season despite the heavy decrease of visitors after August 15. Announcement of the plan of the Great Northern Railway Co. to erect a large hotel in Waterton Park, Canada, at the foot of Waterton Lake is one of great interest to Glacier Park. The new hotel, modeled after the one at Many Glaciers, will offer another delightful spot to be visited by

guests of the latter. Considerable improvement of the grounds of the Glacier Park Hotel was accomplished in connection with the construction of a highway underpass beneath the Great Northern tracks.

Glacier Hotel on Lake McDonald, owned by Mr. John Lewis, has made improvements both in its buildings and in the arrangement of its grounds.

Increased interest in saddle-horse trips was apparent this season although the fires and the inclement weather in September caused a decided falling off of this activity. The Park Saddle Horse Co. doubled the accommodations at its North Circle camps, and established a new camp on Red Eagle Lake which, with the cooperation of the Glacier Park Hotel Co., made possible changing the four-day "Inside Trail" trip into a more comfortable and more pleasurable five-day trip.

#### ROAD DEVELOPMENT

Excellent progress was made on the west section of the Transmountain Road, extending to Logan Pass, under the engineering supervision of the Bureau of Public Roads. This year, in accordance with the interdepartmental agreement, the Bureau of Public Roads also took over the supervision of the Two Medicine Road construction, and began preliminary studies for reconstruction of the Babb-Many Glaciers Road and for widening and finishing the Belton-Avalanche Road.

One 6-mile section of the 55-mile Blackfeet Highway (now undergoing reconstruction by the State of Montana out of Federal aid funds) was turned over as completed to the National Park Service. The maintenance of this completed highway devolves upon the Park Service. Another section of 11 miles, from Babb to the Canadian boundary, is expected to be completed before the opening of the 1927 tourist season. The remaining 38 miles are scheduled for completion in November, 1927. This road is being built on standards properly commensurate with its importance as an international highway, and when completed will be one of the finest roads in Montana. In consequence of the rapid improvement of this approach road system, it now behooves the Park Service to complete a similar improvement of the spur roads leading into the Swiftcurrent, Two Medicine, and Cut Bank Valleys.

Road maintenance in Glacier Park has been improved by the addition to the park staff of a permanent resident engineer who makes this work his major responsibility. Owing to the heavy traffic incident to the fires it was not possible this season to maintain the west side roads in first-class condition, but on the east side much good work was done in spite of the crippling of the working force by heavy drafts of men for fire fighting.

#### FISH PLANTING

A total plant of 3,226,600 fish fry and eyed eggs during the season established a high mark for Glacier Park. Black-spotted, eastern brook and rainbow trout, grayling, and Great Lakes whitefish were included in the plant. Since considerable planting had been done in the remote interior waters during the past several years, the oper-



ations this season were confined largely to the more heavily fished waters accessible to motorists. This record plant will go far toward maintaining the reputation of Glacier Park as a fisherman's paradise.

#### GAME

An interesting reflex of the mild winter was the scattering of the big game throughout the park where its natural food was abundant. Because of this condition no game count could be made, and likewise little feeding of deer and sheep was found necessary. It is believed that the mild winter reacted favorably also upon breeding processes and so lessened the normal loss that an increase considerably above normal occurred among the big game of the park.

#### CRATER LAKE NATIONAL PARK, OREG.

This has been an important year at Crater Lake National Park. The road projects have been consistently pushed by the Bureau of Public Roads which took over road construction in this park on January 1, 1926. Upon recommendations made jointly by the district engineer and the park superintendent the type of road was changed from a penetration-pavement to a crushed rock macadam, later treated with light road oil. This change was primarily in the interest of economy and results have proven its wisdom. Thanks to very early snow recessions in the Cascades the contractors were on the job by June 1 and were able to complete the surfacing of both the Medford and the Klamath Roads by August 10. Later force account crews were organized and the roads were treated with road oil and at the same time a thorough clean-up of the débris incidental to road construction was effected to a distance of 75 feet out from the ditch slopes, so that these two roads are now dustless and the entire right of way rid of all débris, giving grasses and wild flowers opportunity to bloom—a tremendous improvement over former conditions.

Construction of the new road from Government camp to the Rim on a 6½ per cent maximum grade was practically completed, but it was not surfaced. The elimination of the former 11 per cent grade with its steep and hazardous turns means a great step forward. Another noteworthy improvement was the construction of a heavy rustic bridge across the gulch at the Anna Spring plaza, greatly improving alignment and decreasing the congestion at that crowded area. A large survey party has also been engaged this summer in a reconnaissance of the balance of the road system and will submit final report as to locations and estimates by November 1.

#### HEAVY PARK TRAVEL CARED FOR

The year saw another heavy increase in travel to Crater Lake, a total of 86,019 visitors as compared with 65,018 last year. It is especially pleasant to report that there were no accidents on the roads or elsewhere, and that this great throng of people was well taken care of. The little Community House was again the great rallying place for thousands of visitors; its crowded condition night after night bespeaks the need for enlargement.



PARK RANGERS PLACING SIGNS ON NEW PARK BOUNDARY MEET PARTY  
OF VISITORS

SEQUOIA NATIONAL PARK



ON THE WEST RIM TRAIL  
ZION NATIONAL PARK

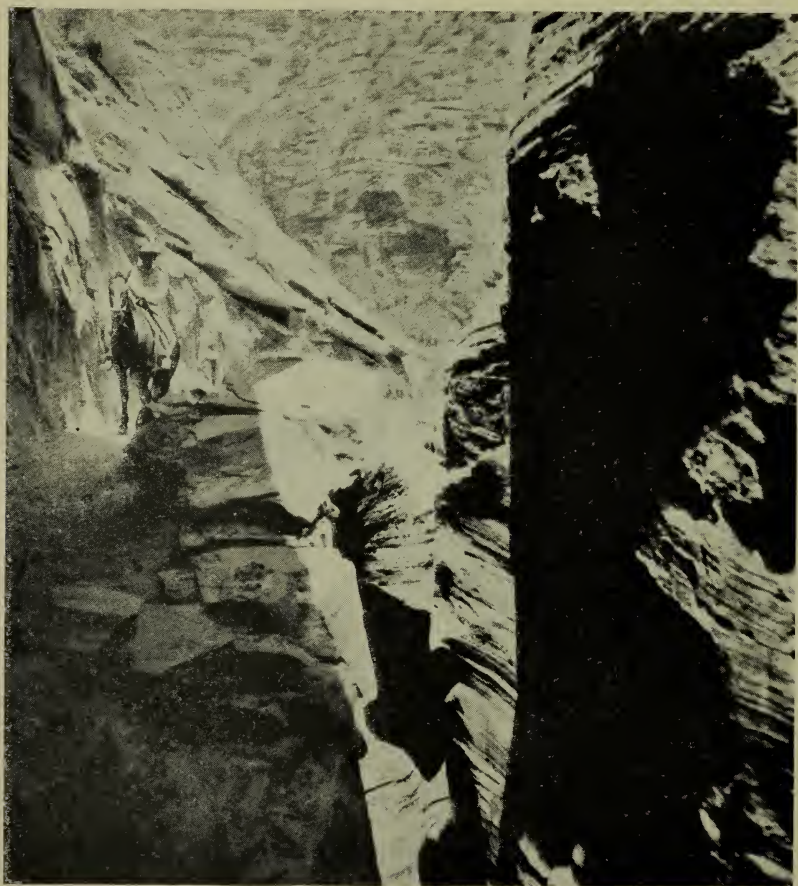
PHOTO BY R. T. EVANS





PHOTO BY F. J. FRANCIS

TIMBERLINE ROAD CAMP  
ROCKY MOUNTAIN NATIONAL PARK



ON THE EAST RIM TRAIL  
ZION NATIONAL PARK



## EDUCATIONAL SERVICE ORGANIZED

A much appreciated innovation at Crater Lake this summer was the initiation of our educational service, organized by Dr. Loye Miller of the University of California and three volunteer assistants who served without pay. As acting park naturalist Doctor Miller made personal contact with more than 6,000 visitors; there were talks every night at the hotel and at the Community House; every day there were walks along interesting trails that permitted informal discussions of park geology, flora, and fauna.

## INSECT CONTROL CONTINUED

Under the direction of the Bureau of Entomology the insect control was continued at Crater Lake National Park this summer. The work among the lodgepole pine was emphasized with results satisfactory to the expert in charge. In the southeast area some very important work was also done resulting in the protection of a beautiful stand of yellow pine, one of the three finest forests in the park. Some experimental work is now being carried on through which investigators hope to discover a means of protecting individual trees against insect ravages.

There were a good many forest fires started by lightning and two by careless visitors, but all of these fires were promptly discovered and controlled with comparative ease.

## GENERAL DEVELOPMENTS

Physical developments at Crater Lake are hardly in step with increased travel because of meager appropriations, but the park is making consistent progress. This summer the telephone system was greatly improved, and connections with the outside were much bettered by the building of a copper line across the Klamath Valley. Sanitation of the two principal camp grounds was further improved this year and a large water heater added to the bathhouse. A fire lookout station was constructed on Mount Scott by the Park Service, the wage of the lookout being paid jointly by the Indian and the Forest Services. A small warehouse was built at the utility site at Government camp, an attractive stone and rustic structure of the type decided upon for all future construction. The plan of development at Crater Lake is fortunately compact and simple and, as funds should become available soon, it is hoped that a five-year period will see development at this park completed except for camp ground developments, the limits of which can not be foreseen. The most pressing administrative needs now are for more warehouse capacity, camp grounds, and sanitation, housing of employees, two additional permanent employees, and a considerable increase of the temporary personnel employed during the three-month season. Mechanical equipment should be provided enabling us to publish with certainty the opening date of this park as June 20 instead of July 1.

## FIELD INVESTIGATION OF ENLARGEMENT PROJECT

In August the Coordinating Commission on Parks and Forests studied the situation at Crater Lake, going over on the ground the

areas proposed for elimination and for addition. The commission made public only one decision, finding against the inclusion of Diamond Lake into the park. On this point I, as a member of the commission, was in entire accord, the Diamond Lake area having been developed too intensively for summer homes and other purposes to warrant our taking it over. Decision on other mooted questions will not be made until the commission meets in Washington next fall.

## SEQUOIA NATIONAL PARK, CALIF.

### PRINCIPAL EVENTS

In the 36 years' history of the park no events equal in importance to park enlargement and the completion of the Generals' Highway have occurred. On July 3 the 252 square miles of the park became 604 miles by passage of the enlargement bill. Almost on the same day the new road was finished to Giant Forest, although travel had been permitted since early in May.

The park enlargement adds to the Big Tree region the River Valley and Kern Canyon, countless lakes and streams, and Mount Whitney. The new road has brought Giant Forest within two hours (54 miles) of Visalia and three hours (90 miles) of Fresno.

Travel, stimulated by the new road and publicity of park enlargement, leaped from 46,677 in 1925 to 89,404, bringing many added problems of sanitation and protection in its wake. On July 4 there were over 6,000 campers in public camps estimated to accommodate a maximum of 2,500.

### LAYOUT FOR DEVELOPMENT

The old village site under the sequoias, which was a gradual development of the "horse and buggy" days, proved inadequate to handle the flood of motor travel, so a new site on more level ground has been chosen by the landscape engineer. It is hoped to transfer the post office, stores, studios, etc., to this site during the fall months. The service station is already transferred and road changes are being made.

A new housekeeping unit will be placed on this site near Beetle Rock on the edge of the sequoia belt, and gradually there will be a clean-up of the buildings and camps in the scenic and congested sequoia area.

### ROAD PROGRESS

The completion of the Generals' Highway to Giant Forest is the first step in the interpark road which should be continued on to General Grant Park, both to permit motor travel by a cool mountain route instead of through the heated valley and to open public auto camps to accommodate the increased numbers coming up the new road.

At present we have a bottle-neck condition at Giant Forest with a wide 22-foot entrance road narrowed to a one-way scenic road to such points as Moro Rock, Sherman Tree, Crescent Meadow, and Lodge Pole Camp. New roads should be built to these much-visited points and the old roads used as bridle trails.

### PUBLIC OPERATORS

The reorganization of the Sequoia-General Grant National Parks Co. with a 20-year contract permits many extensions and improvements which are needed to keep pace with park enlargement and road construction. As a first step, the lodge dining room was enlarged and sleeping accommodations doubled. A new housekeeping unit will follow and a hotel on a site to be chosen later will be a needed addition within a year or so.

### SERVICE TO THE PUBLIC

Despite small appropriations the park has served the public so well that frequent verbal and written commendations have been received. The museum and nature guide service have been expanded practically without appropriation and have given education, information, and pleasure to thousands. The public camps have been congested and funds must be provided to enlarge accommodations for 1927. The park is at its period of maximum development and if its beauties are to be preserved and the public served more liberal appropriations should be given.

### GENERAL GRANT NATIONAL PARK, CALIF.

Again this small but useful park showed a substantial travel increase, 12,869 autos and 50,597 visitors entering, as compared with 11,108 autos and 40,517 visitors in 1925, a gain of 25 per cent. Owing to sewer and water system construction in 1924 the park was able to accommodate the travel increase and the small appropriations permitted some extensions.

The old tortuous and steep road from the Big Tree Grove to Sequoia Lake was entirely rebuilt by Bureau of Roads engineering force and joins an improved county road down to the lake and by new grade to Happy Gap. Undoubtedly this will eventually be the best route into the park and conferences have been held with Fresno County supervisor and engineer looking toward the construction of an exit road from General Grant Park which will be a suitable continuation of the Generals' Highway.

As at Giant Forest, the reorganization of the operating company permits hotel and housekeeping camp development which has long been delayed. The lodge will be moved to a new site and the entire meadow area will be cleared and restored.

The principal needs of the park are a garbage incinerator, and enlargement of the headquarters building. These and other improvements should be provided before completion of the interpark road brings an increase in travel, for which existing accommodations will be entirely inadequate.

### MESA VERDE NATIONAL PARK, COLO.

Judged from every standpoint, the past season has been the most successful in the history of the Mesa Verde National Park. The comparative isolation of this unique area from the great east-and-west transcontinental rail lines and automobile highways has pre-



vented abnormal growth; nevertheless an average yearly gain in attendance of approximately 30 per cent has been recorded for the past five seasons.

#### WATER SITUATION

The pumping of 90,000 gallons of potable water to storage tanks during the closed winter season prevented the closing of the park in mid July when the supply from springs and seeps failed miserably in meeting the demands. At the end of August, however, the storage surplus was practically exhausted.

The completion of a unique water system late this fall will it is hoped provide an ample supply for the next travel season. A catchment area consisting of 1 acre of corrugated roofing erected close to the ground on a sloping hillside will gather, by means of a flume, the snow and rain falling thereon and conduct it through a rapid sand filter to two frost-proof steel storage tanks each holding 125,000 gallons. A 2-inch gravity line will connect the tanks to the present supply lines. This single unit will supply upward of 400,000 gallons of water per year with the average annual precipitation of 18.36 inches falling at this point. Additional units must be constructed to meet increasing demands.

#### ROADS AND TRAILS

During the past season fine progress has been made both in reconstructing the entrance highway to Mesa Verde and in the construction of two short connecting projects where the old line could not be rectified to meet higher road standards. Our road work at Mesa Verde is done by force account, the park road crews being composed for the most part of Navajo Indians from the reservation just to the south, in New Mexico. The cost to the Government has been far below that of the lowest bid submitted on these projects and rejected. Superintendent Nusbaum has established an enviable record with his Navajos in reconstructing to higher standards the roads of the Mesa Verde.

#### GENERAL DEVELOPMENT

The extension of the public camp grounds was necessary because of increased demands, and the erection of a chemical-type comfort station in the lower section of the area has greatly added to the attractiveness of the site. The area has been kept scrupulously clean at all times, a fact much commented on by visitors.

Roads leading from headquarters to the ruins have been somewhat widened, cuts and fills have been made to care for faulty drainage, trees have been carefully trimmed for better vision ahead, and at Square Tower House a new loop road was constructed to accommodate the ever increasing traffic and provide additional parking space. The Sun Temple Road was likewise improved.

Additional rustic cedar fences, transplanted native flowers and shrubbery, and rustic benches have added to the charm of Spruce Tree Camp. The furniture and furnishings for the new room in the museum, the ranger station, and the administration building again reflect the carefully laid plans of Superintendent and Mrs. Nusbaum in developing an ideal in harmony with the environment.

## NEW BUILDINGS

The Aileen Nusbaum Hospital, a congressional recognition of the work of the wife of the superintendent in establishing a first-aid tent for the benefit of visitors and employees, and nursing the sick and injured, is nearing completion. Mrs. Nusbaum, through friends and through surplus war supplies, has gathered together much of the equipment necessary for the operation of this hospital unit, which she designed after inspecting hospital arrangements in many parts of the United States and consulting many authorities thereon. The unit although small is ample to care for emergency needs, and a very small deduction from employees' pay will provide the funds for operation.

## MUSEUM DEVELOPMENT AND EDUCATIONAL WORK

In speaking of his visit to Mesa Verde, Crown Prince Gustaf Adolf of Sweden, a noted authority on museums and their installation as well as a most able archeologist, said that the park museum at Mesa Verde was one of the finest he had inspected in this country. The growth of this museum has been phenomenal. Park friends have provided the funds for the building and for the equipment; have sponsored excavations within the park that the scope and extent of the collections may be enlarged and broadened, that new knowledge may be gained; and directly or indirectly have made possible the acquisition of a fine reference library and many diverse exhibits. A pledge of \$6,000 for extension of the building, \$2,000 for additional exhibit cases, and \$1,000 for the coming winter's excavations has been made this season by a keenly interested park friend. Government support of the museum is limited to the salary of an attendant for six months each year and the purchase of limited special equipment and expendable supplies.

The excavations of the past winter, directed by Superintendent Nusbaum, were most successful. Three subterranean rooms of the very early Post Basket-Maker culture were uncovered in Step House Cave, the first evidence of this culture to be found in this area. A second site of this culture was excavated near the head of Fewkes Canyon. Besides the scientific knowledge gained, the museum gains a fine collection of the artifacts of this early culture. Excellent cliff-dweller material was also found.

## HAWAII NATIONAL PARK, HAWAII

During the past year the volcanic activity of Hawaii National Park was displayed in Mauna Loa, which became active near its summit early in April. The summit activity, consisting mostly of enormous jets of steam, which were illuminated by the molten lava below, lasted only a few hours. Then molten lava appeared through an earthquake crack in the southwest slope of the mountain, which in a period of a few days ran a distance of 15 miles down the lower slopes of the mountain and into the sea. The lake of fire was absent from Kilauea during the year.

### TRAVEL

Park travel showed a decided decrease for two reasons: The visit of the American and Japanese fleets in 1925 made a new high travel record which probably will not be equaled for many years to come, and the absence of the lake of fire, coupled with exaggerated reports of the shortage of water during the summer months, kept many local visitors away.

### IMPROVEMENTS

In the Kilauea area of the park, which is the most popular with visitors, a number of improvements were made during the year. These included the construction of a residence for the park superintendent and a ranger cottage, as well as improvements to the superintendent's office.

Several new trails in this section were built, in addition to improving old trails.

Facilities at the public camp grounds were improved by the construction of a rainshed and additional water tank and cooking grates.

### ADDITIONAL ACCOMMODATIONS TO BE PROVIDED BY OPERATOR

During his inspection of the park last spring Assistant Director Cammerer was convinced of the need of a simpler type of accommodations for visitors, in addition to the Kilauea Volcano House. Therefore when the lease of the hotel company was renewed for 20 years, provision was included in the contract for the erection by the company of a cottage type of summer camp, similar in operation to the military camp but open to the public.

### MILITARY AND NAVAL RECREATION CAMPS

Kilauea Military Camp was enlarged during the year by the construction of several new buildings, and was several times crowded to capacity. So successful has this military camp been that a naval recreation camp was established this past season. The hearty co-operation of the commanders of these camps in assisting the park superintendent in every way possible has been greatly appreciated.

### ROAD WORK

Surveys of all park road projects were completed by the Bureau of Public Roads engineers, and construction of the Chain-of-Craters Road will be initiated as soon as certain details in connection with some rights of way are cleared up.

The county of Hawaii has authorized surveys for a county road which will connect the Chain-of-Craters Road with the Kalapana coast, which is interesting because of its tropical vegetation.

### LAFAYETTE NATIONAL PARK, ME.

The year just closing has been the best in all respects that the park has had since its establishment. There have been more visitors, and in proportion to numbers they have used the facilities offered for recreation and education to a greater extent than ever before.



Great gain too has been made in public recognition, constructive development having progressed to the point where the park's claim as a scenic coastal area to rank with the supreme exhibits of the national park system in the West is clearly established.

#### NATURE STUDY

The park has long been recognized by scientists as an exceptionally rich and fruitful area for nature study. Systematic work along this line, begun a few years since, has advanced remarkably during the past year. Two distinguished groups of scientists are now established on Mount Desert Island for the purpose of studying during the summer the life inhabiting it and its bordering waters.

#### ROAD DEVELOPMENT

The outstanding feature of the year's work, however, has been the great progress made in road construction. The Jordan Pond motor road, traversing the heart of the parkland, has been open during the summer, though lacking still its final surfacing, and has been received with acclaim by visitors as the finest scenic drive of its kind in the East. The first section of the Cadillac Mountain Road has been opened, though also unsurfaced. Increasing use of the park roads and trails by horses is noted.

#### LOCAL COOPERATION

A most satisfactory feature of the year has been the spirit of co-operation shown by the State and neighboring towns in uniting with the park administration to carry out the Government's policies. On the highway leading to the park from the mainland, 5 miles of the finest concrete road are being built by the State, to the great gain of its approach by land, while its approach by sea has been more used this year by pleasure craft than ever before and is famous for its beauty.

#### DONATION OF LAND

A donation of 24 acres of land was made to the Department of the Interior for addition to Lafayette National Park. This land, donated to the park by Superintendent Dorr, will be used for camp-site purposes.

#### HOT SPRINGS NATIONAL PARK, ARK.

The cooperative arrangement with the Treasury Department was continued by having the United States Public Health Service detail a medical officer to act as superintendent.

#### GOVERNMENT FREE BATHHOUSE AND CLINIC

A total of 3,570 persons bathed at the Government free bathhouse during the year. These persons received 79,692 baths.

The free clinic operated in connection with the free bathhouse and under control of an officer of the Public Health Service examined and treated 3,570 patients, 3,075 of which were venereal and 495 nonvenereal cases.

## PAY BATHHOUSES

No new pay bathhouses were opened this year. Total net profits reported by 18 pay bathhouses were \$175,031.45. One house reported a deficit of \$2,911.75. Total baths numbered 788,317, of which 699,700 were paid baths.

## MISCELLANEOUS

Reconstruction of all mountain roads within the park has been continued and the roads have been put in excellent condition. Trails, buildings, and lawns have been well maintained. A community house was constructed at the Government tourist camp. A new sanitary 14-inch cast-iron sewer, about 2,000 feet long, was laid along Bath House Row, costing approximately \$15,000. Practically the entire electric lighting system of the park has been overhauled.

The number of tourists for the year is estimated at 260,000.

## SANITATION AND PUBLIC HEALTH MEASURES

Bathhouses were inspected at least five times monthly, with irregular inspections at intervals. All bathhouse employees were given a monthly physical inspection and new employees were given complete physical examinations. Bacteriological examinations of the water and mosquito-control work was carried on. The park assisted the city of Hot Springs in examination and vaccination of all food handlers in the city.

## ZION NATIONAL PARK, UTAH

Visitors to the youngest national park numbered 21,964, an increase of 5,147, or 30 per cent over the preceding year. Among those from many foreign countries were the Crown Prince, Princess and royal party of Sweden, and significant among representatives of every State of the Union were several who had come from far-distant homes the year before.

Through the cooperation of the United States Geological Survey R. T. Evans, topographic engineer of that service, was again detailed as acting superintendent of Zion National Park.

## IMPROVEMENTS

The Utah Parks Co. continued its development of facilities for visitors by having ready at the beginning of the season 15 additional cottages, a comfort station, and a rebuilt central lodge in which the kitchen and dining-room had been doubled and to which had been added with pleasing artistic effect two wings, one containing a recreation hall with a projector machine, the other a curio shop, store, and barber shop.

Early in July a better power plant was set up in the utility site to produce electricity for a greater number of lights, fans, an ice machine of a daily capacity of 1 ton, and the moving-picture machine. Garages and cottages for two mechanics were also built but not in time to be of any service to the visiting motorists.

The increased travel enabled the Utah & Grand Canyon Transportation Co. to maintain a daily bus service to the North Rim of the Grand Canyon.

Modern telephone service was established on July 20, when the private line of the Utah Parks Co. from Cedar City and the commercial line of the Southern Utah Telephone Co. from St. George were brought to the lodge. Both lines consist of a two-wire copper metallic circuit and are strung on one set of poles.

#### NEW TRAILS

The service's contribution to the park improvements was the reconstruction of two excellent horse trails. Formerly mere routes, they now challenge the admiration of every user for they possess the park standards of 16 per cent average maximum grade, 5-foot width, outside guard walls, inside drainage ditch, and level turns.

The upper third of the West Rim Trail, an entirely new route, opened to travel on July 11, was formally dedicated by the Crown Prince and Princess of Sweden and in their honor named "The Royal Trail."

The upper half of the East Rim Trail is likewise a new route, climbing through the sheer white cliff directly to Observation Point thus rendering this famous viewpoint easily accessible.

#### ROADS

Materially improving the approach to the park 7 miles of new highway were constructed during the spring from the park boundary to Rockville. This leaves only 22 miles of unimproved road between the park and Cedar City, a distance of 65 miles. Surveys have been made beyond Rockville so that this winter more road may be built.

The projected East Rim Road was temporarily halted to permit reconnaissance of other routes. A survey is now in progress of the so-called Parunuweap route under the direction of the Bureau of Public Roads.

#### MOUNT MCKINLEY NATIONAL PARK, ALASKA

Travel into McKinley Park has been increasing yearly, the attendance this year far exceeding previous years because of improvement in road conditions and the increased facilities available for transporting and care of the visitors. During my visit to the park this year I was greatly interested in noting the enthusiasm displayed by these visitors and the accommodations that had been provided to care for them.

The reorganization of the Mount McKinley Tourist & Transportation Co. has resulted in considerable improvement of transportation and camp accommodations. The motor equipment and saddle and pack horse outfits were increased, and Savage Camp (12 miles from the railroad) was enlarged and improved. It now accommodates 52 visitors comfortably.

For the accommodation of those wishing to penetrate into the more distant portions of the park by saddle and pack trains four camps were established between Savage Camp and Copper Mountain, a distance of 60 miles, from which point a magnificent close-up view of Mount McKinley may be had and a portion of the ice-capped Alaska Range may be seen. Interest on the trip is stimulated by the ever-changing scenery and large number and variety of wild animals.



### ROADS

The Alaska Road Commission was in charge of road construction in the park. Under the three-year road project provisions were made for the construction of 33 miles of road and 70 miles of trail, at an estimated cost of \$272,700. Of this amount, \$80,000 was allotted for the first year and \$50,000 during the fiscal year 1926. In addition to national park road funds, cooperative funds of the Alaska Road Commission and the Territory of Alaska were expended on the project.

The park forces with the cooperation of the park transportation company cleared and made available 8 miles of crude road from Savage Camp to the headwaters of Savage River, over which horse stages and light autos are operated.

### HUNTING IN THE PARK

Again it was noted that considerable hunting was carried on in the central and western portions of the park. During the fall a large number of sheep were killed on the Toklat River near the northern boundary, at a time when the rangers were freighting in their supplies. The McKinley River, 75 miles from headquarters, was the scene of a large killing of caribou. Rangers were patrolling this section but the distance was too great and the small forces of two rangers and a short-time temporary ranger too small to give close patrol. The eastern portion of the park is well protected. No evidence of illegal hunting was found there during the year. Close patrol is necessary in this section as the game is becoming very tame and illegal hunters would make a big killing if the vigilance of the park force was relaxed in the slightest degree.

### NEEDED DEVELOPMENT

The most important future developments in McKinley Park are extension of roads and an increase in the ranger force.

Though the partially completed 22 miles of park road are responsible for the yearly increase of visitors and open up an interesting game section of the park, 45 or 50 miles of additional road would open up the more interesting features of the park which are close to Mount McKinley. All who have visited the park regret the lack of a road penetrating into the more distant portions, as the necessary high rates for horse transportation and time consumed in making the trip on horseback are prohibitive to most of them.

The small force of three rangers assisted by the superintendent is only sufficient to protect the eastern portion of the park, with occasional trips into the more distant portions. Care of visitors can only be accomplished at a sacrifice of much-needed patrol.

### LASSEN VOLCANIC NATIONAL PARK, CALIF.

A study of volcanic conditions in Lassen Volcanic National Park was undertaken during the past year when the Geological Survey detailed a resident geologist-volcanologist to the park. The frequent earth tremors that occur in the region are being recorded, and the volcano itself studied.

## TOPOGRAPHIC MAP COMPLETED

The topographic mapping of the park, which was in progress for several years, was completed and an accurate map will soon be available. This map has been urgently needed in connection with the planning of park developments.

## PARK DEVELOPMENTS

Construction of the main park road was carried on during the year under the supervision of the Bureau of Public Roads. No new trails were built, but the old trails were improved sufficiently to serve the public until the highway is completed and a new system of trails can be planned to tie up with this road.

The construction of two ranger stations and the installation of 12 miles of telephone line are a decided step forward in the development of this park, which has been actively administered by the National Park Service for a little more than a year.

## PARK VISITORS

The year has shown a marked increase in travel, a total of 18,739 people having visited the park this year as against 12,596 in 1925. Practically all of these visitors came in private cars, as no transportation facilities have yet been developed in the park.

## WIND CAVE NATIONAL PARK, S. DAK.

Among the increased number of visitors to Wind Cave National Park this year were more people from eastern points than ever before.

The larger visiting list emphasizes the insufficient facilities and accommodations available, and if the park is to be maintained as a national reservation it is important that this condition be remedied.

Especially needed are a new water supply and the replacement of the present antiquated system of lighting the cave by modern lighting plant. This year the water supply completely failed to meet the increasing demands made upon it, and at considerable expense water had to be hauled. The portable gasoline lanterns and candles, which must be carried by visitors over the winding trails and steep stairways in the cave, elicited more adverse criticism this year than at any time in the past. It is not only tiring to carry these lanterns, but the gases and odors they give off are annoying to all. In addition, the cave is not properly lighted and the visitors can not gain a true conception of its real beauty, nor can its formation be properly protected. While substantial appropriations will be necessary to effect these improvements, once they are made the park will be able to operate on a purely maintenance basis with nominal appropriations.

The principal improvement during the year was the reconstruction of the park road, which was urgently needed. This road should now be graveled to enable it to stand up under the heavy traffic that goes over it each season.

**PLATT NATIONAL PARK, OKLA.**

Travel to Platt National Park dropped considerably during the year, a total of 248,569 as against 573,522 for last year. In the past, however, it has been the practice to divide by four the total number of visitors, as it was believed that undoubtedly many of them entered the park several times. This year the superintendent recommended that the number actually recorded be divided by two only, as a very close count was kept and it seemed that this would be a fair estimate. Even on this basis travel showed a decided reduction this year, 124,284 as against 143,380 last year.

This loss in travel is apparently due to several causes. Travel to the park is mostly local, and the opening up of several resorts in Oklahoma, the building of swimming pools in many towns in the vicinity, and the acquiring of automobiles to take people farther afield, all have contributed to the lessening of Platt's popularity.

Supt. Forest D. Carter, who was in charge of the park at the beginning of the past year, was transferred to Glacier National Park as chief park ranger, and the vacancy at Platt Park was filled by the appointment of William E. Branch as superintendent. More recently, Mr. Branch accepted a transfer to the Bureau of Indian Affairs and King Crippen was appointed superintendent, effective October 1.

During the year the principal roads in the park were improved, and some repairs and improvements to buildings were also made.

**SULLYS HILL NATIONAL PARK, N. DAK.**

Through the cooperation of the Bureau of Indian Affairs the superintendent of the Fort Totten Indian School continued during the year to act as the superintendent of the Sullys Hill National Park without compensation from the National Park Service. No funds have ever been available for expenditure in this park.

While travel to the park increased during the year, it was mainly local in character, as in the past.

The Bureau of Biological Survey of the Department of Agriculture continued to use the area as a game preserve.

**NATIONAL MONUMENTS**

Again, during the past year, the monuments demonstrated their increasing popularity, the number of visitors being 384,040 as against 347,572 for 1925.

The superintendent of southwestern monuments continued his general supervision of all the national monuments of the Southwest, in addition to serving as custodian of the Casa Grande Monument. This group of monuments alone drew a total of 207,783 visitors. The advantages of having a local superintendent handling the field administration of this group of monuments are more evident each year, and the possibilities of development are limited only by lack of funds for administrative, protective, and improvement work.

Repair and restoration work on prehistoric and historic ruins in the Aztec Ruin, Casa Grande, Chaco Canyon, Gran Quivira, Pipe Spring, and Tumacacori National Monuments was carried on during the year in an effort to prevent disintegration.



At the Chaco Canyon National Monument the National Geographic Society completed its sixth season of work under the leadership of Dr. Neil M. Judd, excavating and studying the Pueblo Bonito and Pueblo del Arroyo ruins. This work has brought to view ruined dwellings which are considered the finest examples of prehistoric architectural skill extant in the United States. At the Gran Quivira excavation and repair work was carried on again in cooperation with the American School of Archeology.

In the administration and development of the Carlsbad Cave National Monument the service has assumed its first obligation to develop a tremendous underground cavern, taken over in an undeveloped state, on a par with the most famous and best developed caves in the United States. The problem is a large one, and the plans of development will, under available funds, require a number of years to bring it to completion. The installation of a modern lighting system, proper sanitation, safe pathways, water supply, and the like are all projects of considerable importance in the interest of the visitors, and are second only to the duty of keeping vandalism out of the cavern itself by an adequate guiding personnel, so that its wonderful exhibits may be kept unmarred for all time. Considerable progress already has been made, but the national interest in this cavern, evidenced by the constantly increasing visiting list, demands that such development work continue to the point where facilities and conveniences satisfactory to accommodate the visitors have been installed.

The outstanding development in Muir Woods National Monument during the past year was the construction of the Muir Woods Toll Road. This road, 3.8 miles in length, connects Mill Valley with the Dipsea Highway at Big Lagoon on the Pacific Ocean. The eastern half of this road, connecting Muir Woods with Mill Valley, was completed and opened to travel on April 25, 1926. The western half, connecting Muir Woods with Big Lagoon, was opened to travel on July 25, 1926. In the past auto travel to the monument was greatly hampered by the wretched condition of the one road leading into it. With access to the monument over good roads from two directions, a very satisfactory increase in travel has already been noted. There were 97,426 visitors as against 93,643 in 1925. It was necessary for the custodian to employ one or two assistants on Sundays and holidays during the summer season. Fortunately, the undesirable element frequenting this locality in previous years has practically disappeared. No funds for improvements were available during the past year. Routine operations were carried on on roads and trails and the park was kept free of litter at all times. It is of importance that funds be provided for stream revetments at the earliest practicable date, as it is feared that the storm of February, 1925, lowered the water table to such an extent that it will react disastrously on the redwoods. Furthermore, several fine trees now being undermined by the stream could be saved by the construction of log bulkheads around their bases.

At Pinnacles National Monument the trails were extended and improved during the year, and the parking and camping grounds were also improved through the expenditure of Government and private funds. Now a total of about 500 cars can be parked in the monu-

ment. A much-needed water system was also provided through private funds. The water is piped from natural springs to two 6,000-gallon tanks, which provides an ample supply for present needs.

The Board of Road Commissioners for Alaska continued to supervise the governmental activities in Sitka National Monument, and together with the Territory of Alaska continued to cooperate in furnishing funds to supplement the National Park Service's allotment for repair work. Work was continued on the restoration of the old Indian totem poles, which form the principal exhibit of the monument. It is expected that when these repairs are completed the poles will be preserved permanently, or at least that heavy repairs will be rendered unnecessary for many years. Through the efforts of the Sitka Commercial Club, the Alaska Historical Association, and others the sum of \$1,200 was raised by private subscription for the restoration of Blockhouse No. 2, a historic relic of the days of Russian occupation and Indian conflict. The project was approved by the National Park Service and the blockhouse restored during the summer.

### LEGISLATION

The following is a summary of legislation affecting the national parks considered in Congress since the preparation of the ninth annual report.

#### BILLS ENACTED INTO LAW

The urgent deficiency act of March 3, 1926,<sup>1</sup> carried an appropriation of \$40,000 for emergency reconstruction and fighting forest fires in national parks, fiscal year 1926. This act also contained an item for the Indian Service of \$100,000 which is to defray one-half of the cost of construction of a bridge and approaches thereto across the Colorado River at a site about 6 miles below Lee Ferry, Ariz. This sum is to remain available until June 30, 1927, and is to be reimbursed from funds hereafter placed in the Treasury to the credit of the Navajo Indians. When completed this bridge and approaches will greatly facilitate motor travel between the North and the South Rims in the Grand Canyon National Park.

The Interior Department appropriation act of May 10, 1926,<sup>2</sup> carried appropriations of \$3,698,920 for the National Park Service in Washington and for the administration, protection, maintenance, and improvement of the various national parks and monuments. In addition to \$2,000,000 appropriated for road work within the national parks and monuments, the Secretary was authorized to incur obligations and enter into contracts for additional road work not exceeding a total cost of \$1,500,000. The act also contained a proviso authorizing the National Park Service to contract for medical attention and service for employees and to make necessary pay-roll deductions agreed to by the employees therefor.

S. 3595,<sup>3</sup> signed by the President May 10, entitled "An act to authorize the exchange of certain patented lands in the Grand Canyon National Park for certain Government lands in said park," authorized the consolidation of the private holding of William Randolph Hearst, located near Grand View on the south rim of the Grand Canyon.

<sup>1</sup> Public No. 36.

<sup>2</sup> Public No. 206.

<sup>3</sup> Public No. 210.

S. 4073,<sup>4</sup> approved May 22, entitled "An act to provide for the establishment of the Shenandoah National Park in the State of Virginia and the Great Smoky Mountain National Park in the States of North Carolina and Tennessee, and for other purposes," provided that when certain lands have been donated to the United States there shall be established the Shenandoah National Park, Va., and the Great Smoky Mountains National Park, Tenn.-N. C.

S. 4209,<sup>5</sup> signed by the President May 25, entitled "An act to provide for the establishment of the Mammoth Cave National Park in the State of Kentucky, and for other purposes," provided that when certain lands in the Mammoth Cave region of Kentucky shall have been donated to the Government the Mammoth Cave National Park shall be established.

H. R. 10733,<sup>6</sup> approved May 26, entitled "An act to make additions to the Absaroka and Gallatin National Forests, and the Yellowstone National Park, and to improve and extend the winter feed facilities of the elk, antelope, and other game animals of Yellowstone National Park and adjacent land, and for other purposes," authorized the extension of the reservations named through donations of land or by the purchase of lands with funds donated for this purpose in order to provide the necessary range for the wild animals.

H. R. 10126,<sup>7</sup> approved May 28, entitled "An act to revise the boundary of the Mount Rainier National Park in the State of Washington, and for other purposes," provided for the transfer of small areas of national-park land to Forest Service jurisdiction and small areas of national-forest land to National Park Service jurisdiction. These adjustments were for the purpose of substituting natural boundary lines formed by rivers issuing from the park at the southwest, northwest, and northeast corners for the old artificial land lines.

S. 2703,<sup>8</sup> signed by the President June 7, entitled "An act to restore to the public domain certain lands within the Casa Grande Ruins National Monument, and for other purposes," eliminated from the Casa Grande National Monument a small area needed for right of way in the construction of a canal to provide irrigation facilities for lands of the Pima Indians.

H. R. 9390,<sup>9</sup> approved June 9, entitled "An act to eliminate certain privately owned lands from the Rocky Mountain National Park and to transfer certain other lands from the Rocky Mountain National Park to the Colorado National Forest, Colorado," provided for the elimination of certain privately owned lands from the park.

H. R. 12264,<sup>10</sup> signed by the President July 3, entitled "An act to facilitate and simplify the work of the National Park Service, United States Department of the Interior, and for other purposes," provided for the assisting of visitors within national parks and national monuments in emergencies by selling food supplies, and also for medical attention to employees in the service.

H. R. 9387,<sup>11</sup> approved July 3, entitled "An act to revise the boundary of the Sequoia National Park, California," provided for the addition of a large area east of the park, including the Kern

<sup>4</sup> Public No. 268.

<sup>5</sup> Public No. 283.

<sup>6</sup> Public No. 295.

<sup>7</sup> Public, No. 303.

<sup>8</sup> Public, No. 342.

<sup>9</sup> Public, No. 363.

<sup>10</sup> Public, No. 513.

<sup>11</sup> Public, No. 465.



Canyon and Mount Whitney, and for the elimination of certain small areas.

The deficiency act of July 3, 1926,<sup>12</sup> contained no appropriations for the National Park Service but made the appropriation of \$20,000 carried in the second deficiency act, fiscal year 1925, to enable the Secretary of the Interior to carry out the provisions of the act entitled "An act for securing of lands in the Southern Appalachian Mountains and in the Mammoth Cave regions of Kentucky for perpetual preservation as national parks," approved February 21, 1925, available until June 30, 1927. It also provided that not to exceed \$3,000 of the appropriations of the National Park Service for the fiscal year 1927 should be available for the payment of travel, subsistence, supplies, and other expenses of the committee, including its secretary, created upon recommendation of the President's Committee on Outdoor Recreation to study and report upon adjustment of boundaries between national parks and national forests.

#### BILLS INTRODUCED BUT NOT ENACTED BEFORE THE CLOSE OF THE LAST SESSION

H. R. 9916, "A bill to revise the boundary of the Grand Canyon National Park in the State of Arizona, and for other purposes." The bill proposes the transfer of lands required for the adequate development of the park-road system to be added to the park, and the return of lands not needed for park purposes to national-forest status.

H. R. 9917, "A bill to revise the boundary of Yellowstone National Park in the States of Montana, Wyoming, and Idaho, and for other purposes." The bill provides for the extension of the park to include the Teton Mountains, an area at the southeast corner of the park, and two smaller sections at the northwest and northeast corners of the park, and for the elimination of three small areas. At public hearings on this bill opposition developed. A counterproposal was made to eliminate 20 square miles in the southwestern portion of the park for irrigation purposes, which was vigorously opposed by conservationists. The bill was not reported out of committee during the session.

S. J. Res. 237, authorizing the Committee on Public Lands and Surveys to hold hearings to investigate the advisability of changing the boundary of Yellowstone and other national parks. As submitted this resolution authorized the expenditure of \$15,000 by the committee, but this amount was reduced to \$3,500.

H. R. 12416, "A bill to establish a national forest reserve and national park in each of the several States to promote reforestation, and for other purposes."

Bills were also introduced for the creation of the following national parks: Killdeer, N. Dak.; Mount Katahdin, Me.; Roosevelt, N. Dak.; Grand Coulee, Wash.; Blue Knob, Pa.; Mena, Ark.; Ponce de Leon, Fla.; Olympic, Wash.; 5,000 acres of land in Jeff Davis County, Tex., and for parks in the Blue Ridge and Cohutta Mountains, Ga. A bill was also introduced for the establishment of the Battle of the Bear's Paw National Monument, Mont.

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<sup>12</sup> Public, No. 492.

Other pending measures of interest to the Park Service are given hereafter:

H. R. 184, "A bill authorizing the construction of approach roads to national parks and monuments."

H. R. 337, "A bill to provide for the enlargement of the winter game (elk) refuge in the State of Wyoming."

S. 1046, "A bill to consolidate certain patented lands in Glacier National Park."

S. 1405, "A bill making an appropriation for the construction of roads and bridges on the north approach to and within the Petrified Forest National Monument."

H. R. 6097, "A bill to accept the cession by the State of Arkansas of exclusive jurisdiction over a tract of land within the Hot Springs National Park, and for other purposes."

H. R. 7672, "A bill to provide for the protection of the Dinosaur National Monument, and for other purposes." This bill proposes that \$100,000 be made available to protect the monument and to excavate and prepare for exhibition at the monument a fossil dinosaur.

H. R. 9388, "A bill for establishing a forestry experimental station and national park at the 'Old Stockade,' near Millen, in Jenkins County, Georgia, and for other purposes."

S. 3295, "A bill authorizing the construction of a road in Rainier National Park." This bill authorized the appropriation of \$500,000 for the construction of this road, inclusive of necessary bridges.

S. 3386, "A bill to provide for the construction of a road from Maine, Arizona, to the south boundary of the Grand Canyon National Park."

H. R. 10278, "A bill to provide for the acquisition of additional lands for the Lassen Volcanic National Park."

H. R. 11606, "A bill for establishing a hardwood forestry experimental station and national park near Colfax, Louisiana, and for other purposes."

H. R. 12261, "A bill authorizing appropriation of funds for construction of a highway from Red Lodge, Montana, to the boundary of the Yellowstone National Park near Cooke City, Montana, as an entrance to the Yellowstone National Park."

### CONCLUSION

The first decade of its service to the public has closed, and a new era is opening up before the National Park Service. After reviewing the activities of the past 10 years, and especially of the period covered by this report, I can say with deep conviction that I believe the service is fulfilling to the best of its ability the task outlined for it by Congress. The increased travel to the parks, and the larger area now included in the national park and monument system have brought greatly increased responsibilities to the service, which have been capably met by its loyal field and office personnel.

While the report in general covers the fiscal year ended June 30, for comparative purposes in connection with travel statistics it has been deemed advisable to consider the travel year as ending September 30.

STEPHEN T. MATHER, *Director*.





## APPENDIX A

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### THE NATIONAL PARKS AND MONUMENTS

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## NATIONAL PARKS ADMINISTERED BY THE NATIONAL PARK SERVICE, DEPARTMENT OF THE INTERIOR

[Number, 19; total area, 11,710 square miles, or 7,493,243 acres; chronologically in order of creation]

Name	Location	Nearest rail stations	When established	Statute reference	Area (square miles)	Area (acres)	Private lands (acres)	Special characteristics
Hot Springs.....	Middle Arkansas.....	{Hot Springs, Rock Island and Missouri Pacific Systems.	{Apr. 20, 1832	{4 Stat. 505. 21 Stat. 288. 41 Stat. 1407.	{1½	911. 63	None.	{46 hot springs possessing curative properties—Many hotels and boarding houses—19 bathhouses under Government supervision.
Yellowstone.....	Wyoming, Montana, and Idaho.	Gardiner, Mont., Northern Pacific; West Yellowstone, Mont., Union Pacific; Cody, Wyo., Burlington Route; Lander, Wyo., Chicago & North Western; Three Forks, Mont., Chicago, Milwaukee & St. Paul.	Mar. 1, 1872	17 Stat. 32, 33	13,348	2,142,720	None.	More geysers than in all rest of world together—Boiling springs—Mud volcanoes—Petrified forests—Grand Canyon of the Yellowstone, remarkable for gorgeous coloring—Large lakes—Waterfalls—Vast wilderness inhabited by deer, elk, bison, moose, antelope, bear, mountain sheep, etc.—Greatest wild bird and animal preserve in the world.
Sequoia (sē-kwōi'-ā).....	Middle eastern California.	{Exeter or Visalia, Santa Fe and Southern Pacific.	{Sept. 25, 1890 July 3, 1926	{26 Stat. 478, 650.	604	386,560	2,600	{Several hundred Sequoia trees over 10 feet in diameter, some 25 to 36 feet in diameter—Flowering mountain ranges—Startling precipices—Mount Whitney, highest peak in continental United States—Fine trout fishing. Valley of world-famed beauty—Lofty cliffs—Romantic vistas—Waterfalls of extraordinary height—3 groves of big trees—Large areas of snowy peaks—Waterwheel Falls—Good trout fishing.
Yosemite (yō-sēm'-i-tē).....	do.....	{Merced, Southern Pacific and Santa Fe; Entrance Yosemite Valley R. R. to El Portal.	{Oct. 1, 1890	{26 Stat. 650. 33 Stat. 702. 34 Stat. 831.	1,125	719,802.4	8,993.64	Created to preserve the celebrated General Grant Tree, 35 feet in diameter—6 miles from Sequoia National Park.
General Grant.....	do.....	Fresno, Sanger, or Visalia, Santa Fe and Southern Pacific.	do.....	26 Stat. 650.	4	2,536	160	Largest accessible single-peak glacier system—28 glaciers, some of large size—48 square miles of glacier, 50 to 500 feet thick—Wonderful subalpine wild-flower fields.
Mount Rainier (rā-nēr').....	West central Washington.	Ashford, Chicago, Milwaukee & St. Paul.	{Mar. 2, 1899 {May 28, 1926	30 Stat. 993.	325	207,782	485.59	Lake of extraordinary blue in crater of extinct volcano, no inlet, no outlet—Sides 1,000 feet high—interesting lava formations—Fine fishing.
Crater Lake.....	Southern Oregon.....	Medford or Klamath Falls, Southern Pacific	May 22, 1902	32 Stat. 202.	249	159,360	1,949.21	

Platt.....	Southern Oklahoma.....	{Sulphur, Santa Fe System and Frisco lines.	{July 1, 1902 Apr. 21, 1904 June 28, 1906 Jan. 9, 1903	{32 Stat. 641, 655. 32 Stat. 220 32 Stat. 837 32 Stat. 765	{1½ 17	{848.22 10,899.22	{None. None.	{Many sulphur and other springs possessing medicinal value. Cavern having many miles of galleries and numerous chambers of considerable size containing many peculiar formations.
Sullys Hill.....	North Dakota.....	{Devils Lake, Great Northern, and Soo Line.	{Apr. 27, 1904	{33 Stat. 322, 323, 2368.	{1½	{780	{None.	{Small park with woods, streams, and a lake; is an important wild-animal preserve.
Mesa Verde (má'sa vér'dá).	Southwestern Colorado.	{Mancoos, Denver & Rio Grande Western.	{June 29, 1906 June 30, 1913	{34 Stat. 616 38 Stat. 82, 83, 84	{77	{48,966.4	{950	{Most notable and best preserved prehistoric cliff dwellings in United States, if not in the world.
Glacier (glá'shër)	Northwestern Montana.	{Glacier Park Station and Belton, Great Northern.	{May 11, 1910	{36 Stat. 354	{1,534	{981,681	{11,525	{Rugged mountain region of unsurpassed alpine character—250 glacier-fed lakes of romantic beauty—60 small glaciers—precipices thousands of feet deep—almost sensational scenery of marked individuality—fine trout fishing.
Rocky Mountain.....	{North middle Colorado.	{Longmont, Burlington Route and Colorado & Southern; Loveland, Colorado & Southern; Lyons, Burlington Route; Boulder, Denver Interurban and Colorado & Southern; Fort Collins, Union Pacific and Colorado & Southern; Granby, Denver & Salt Lake.	{Jan. 26, 1915 Feb. 14, 1917 June 2, 1924 June 9, 1926	{38 Stat. 798 39 Stat. 916 43 Stat. 252	{378	{241,739	{29,113	{Heart of the Rockies—snowy range, peaks 11,000 to 14,255 feet altitude—remarkable records of glacial period.
Hawaii (há-wi)	Hawaiian Islands.....	{Interisland steamers from Honolulu.	{Aug. 1, 1916 May 1, 1922	{39 Stat. 432 42 Stat. 503	{186	{118,695	{41,000	{3 separate areas: 2—Kilauea, continuously active for century and section of interesting Kau Desert, and Mauna Loa, altitude 13,675 (largest active volcano in world, erupting every decade)—are on Hawaii; Haleakala, on Maui, 10,000 feet high, with tremendous rift in summit 8 miles across and 3,000 feet deep; contains many cones, gorgeous tropical forests; mahogany groves, and lava caves; erupted 200 years ago.

2 Estimated.

1 In Wyoming 3,114 square miles; in Montana, 198 square miles; in Idaho, 36 square miles.



## NATIONAL PARKS ADMINISTERED BY THE NATIONAL PARK SERVICE, ETC.—Continued

Name	Location	Nearest rail stations	When established	Statute reference	Area (square miles)	Area (acres)	Private lands (acres)	Special characteristics
Lassen Volcanic (Las'én)	Northern California.	Red Bluff, Southern Pacific, Paxton, Western Pacific.	Aug. 9, 1916	39 Stat. 442	124	79,561.68	2,190	Only active volcano in United States proper—Lassen Peak, 10,460 feet in altitude—Cinder Cone, 6,907 feet—Hot Springs—Mud geysers—Ice cave—Majestic canyons—Numerous lakes—Fine forests.
Mount McKinley	South central Alaska	{ McKinley Park Station, United States Alaska Railroad. Grand Canyon Station, Santa Fe System, North Rim motor stage from Cedar City, Utah, Union Pacific; or from Marysville, Utah, Denver & Rio Grande Western.	{ Feb. 26, 1917 Jan. 30, 1922	{ 39 Stat. 938 42 Stat. 359	{ 2,645	1,692,800	None.	{ Highest mountain in North America (altitude 20,300 feet)—Rises higher above surrounding country than any other mountain in world.
Grand Canyon	{ North central Arizona. }	{ Mount Desert Ferry, Maine Central System. { Cedar City, Union Pacific System.	{ Jan. 11, 1908 Feb. 26, 1919	{ 35 Stat. 2175 40 Stat. 1175	{ 958	613,120	1,034.83	{ The greatest example of erosion and the most sublime spectacle in the world.
Lafayette	Maine coast	{ Mount Desert Ferry, Maine Central System.	{ July 8, 1916 Feb. 26, 1919	{ 39 Stat. 1785 40 Stat. 1178	{ 12	7,680	None.	{ The group of granite mountains upon Mount Desert Island.
Zion	Southwestern Utah	{ Cedar City, Union Pacific System.	{ July 31, 1909 Mar. 18, 1918 Nov. 19, 1919	{ 36 Stat. 2498 40 Stat. 1760 41 Stat. 356	{ 120	76,800	1,818.44	{ Magnificent gorge (Zion Canyon) depth from 1,500 to 2,500 feet, with precipitous walls—of great beauty and scenic interest.

<sup>3</sup> Formerly Grand Canyon National Monument.<sup>4</sup> Formerly Sieur de Monts National; donated to the United States.<sup>5</sup> Formerly Zion National Monument.

# NATIONAL MILITARY AND OTHER PARKS ADMINISTERED BY THE WAR DEPARTMENT

[Number, <sup>7</sup>; total area, 22 square miles or 14,038 acres; chronologically in order of creation]

Name	Location	Approaches	When established	Statute reference	Area (acres)	Special characteristics
Chickamauga and Chattanooga.	Georgia and Tennessee.	Chattanooga, several southern roads.	Aug. 19, 1890	26 Stat. 333, 978.	6,543	Beautiful natural park—Embraces battle fields of Chickamauga and Missionary Ridge and scenes of other conflicts of the Civil War fought in the vicinity of Chattanooga during 1863.
Antietam Battle Field.	Maryland.	Antietam, Norfolk & Western.	Aug. 30, 1890	26 Stat. 401.	50	Scene of one of the greatest battles of the Civil War.
Shiloh.	Tennessee.	Corinth, Miss., Illinois Central, and Southern.	Dec. 27, 1894	28 Stat. 597.	3,546	Natural park embracing the battle field of Shiloh near Pittsburg Landing.
Gettysburg <sup>1</sup> .	Pennsylvania.	Gettysburg, Philadelphia & Reading, and Western Maryland.	Feb. 11, 1895	28 Stat. 651.	2,451	Beautiful natural park—Scene of Civil War combat—Probably better marked than any other battle field in the world.
Vicksburg.	Mississippi.	Vicksburg, Alabama & Vicksburg, Vicksburg, Shreveport & Pacific, and Yazoo & Mississippi Valley.	Feb. 21, 1899	30 Stat. 841.	1,323	Beautiful natural park—Scene of the siege and surrender of Vicksburg in 1863 during the Civil War.
Lincoln's Birthplace <sup>1</sup> .	Kentucky.	Hodgenville, Illinois Central	July 17, 1916	39 Stat. 385.	-----	Contains the log cabin and part of the farm where Abraham Lincoln was born.
Guilford Courthouse.	North Carolina.	Greensboro, Southern, and Atlantic & Yadkin.	Mar. 2, 1917	39 Stat. 996.	125	Near Greensboro—Scene of one of the great battles of the Revolution; fought in 1781.

<sup>1</sup>Donated in whole or in part to the United States

## NATIONAL MONUMENTS

ADMINISTERED BY THE NATIONAL PARK SERVICE, DEPARTMENT OF THE INTERIOR

[Number, 32; total area, 3,681.32 square miles or 2,356,036.81 acres; chronologically in order of creation]

Name	Location	Approaches	Date of creation	Statute book reference to proclamation	Area (acres)	Special characteristics
Devils Tower	Wyoming	Moorecroft, Burlington Route.	Sept. 24, 1906	34 Stat. 3236	1, 152	Remarkable natural rock tower, of volcanic origin, 1,200 feet in height.
Montezuma Castle	Arizona	Clarkdale, Santa Fe System.	Dec. 8, 1906	34 Stat. 3265	1 160	Prehistoric cliff-dwelling ruin of unusual size situated in a niche in face of a vertical cliff. Of scenic and ethnologic interest.
El Morro	New Mexico	{ Gallup or Thoreau, Santa Fe System.	{ Dec. 8, 1906 { June 18, 1917	{ 34 Stat. 3264 { 40 Stat. 1673	{ 240	{ Enormous sandstone rock eroded in form of a castle, upon which inscriptions have been placed by early Spanish explorers. Contains cliff-dweller ruins. Of great historic, scenic, and ethnologic interest.
Petrified Forest	Arizona	{ Adamana or Holbrook, Santa Fe System.	{ Dec. 8, 1906 { July 31, 1911	{ 34 Stat. 3266 { 37 Stat. 1716	{ 25, 625	{ Abundance of petrified coniferous trees, one of which forms a small natural bridge. Is of great scientific interest.
Chaco Canyon (chă'kô)	New Mexico	Thoreau, Santa Fe System.	Mar. 11, 1907	35 Stat. 2119	1 20, 629	Numerous cliff-dweller ruins, including communal houses, in good condition and but little excavated.
Muir Woods (mūr)	California	{ Ferry from San Francisco, thence Mount Tamalpais & Muir Woods R. R.	{ Jan. 9, 1908 { Sept. 22, 1921	{ 35 Stat. 2174 { 42 Stat. 2249	{ 425. 43	{ One of the most noted redwood groves in California, and was donated by Hon. William Kent, ex-Member of Congress. Located 7 miles from San Francisco.
Pinnacles	do.	{ Soledad or Hollister, Southern Pacific.	{ Jan. 16, 1908 { May 7, 1923	{ 35 Stat. 2177 { 43 Stat. Proc. 1660	{ 2, 980. 26	{ Many spirelike rock formations, 600 to 1,000 feet high, visible many miles; also numerous caves and other formations.
Natural Bridges	Utah	{ Pack trip from Blanding, Utah, reached by stage from Thompson, Utah, or Mancos, Colo., stations on Denver & Rio Grande Western.	{ Apr. 16, 1908 { Sept. 25, 1909 { Feb. 11, 1916	{ 35 Stat. 2183 { 36 Stat. 2502 { 38 Stat. 1764	{ 1 2, 740	{ 3 natural bridges, among largest examples of their kind. Largest bridge is 222 feet high, 65 feet thick at top of arch; arch is 28 feet wide; span 261 feet; height of span, 157 feet. Other two slightly smaller.
Lewis and Clark Cavern <sup>2</sup>	Montana	Temporarily closed to public	{ May 11, 1908 { May 16, 1911	{ 35 Stat. 2187 { 37 Stat. 1679	{ 160	{ Immense limestone cavern of great scientific interest, magnificently decorated with stalactite formations. Now closed to public because of depredations by vandals.
Tumacacori (tū-mă-kă'-kô-ré).	Arizona	Tucson, Southern Pacific, and El Paso & Southern.	Sept. 15, 1908	35 Stat. 2205	10	Ruin of Franciscan mission dating from seventeenth century. Being restored by National Park Service as rapidly as funds permit.
Navajo (năv'ă-hô)	do.	{ Gallup, N. Mex., or Flagstaff, Ariz., Santa Fe System.	{ Mar. 20, 1909 { Mar. 14, 1912	{ 36 Stat. 2491 { 37 Stat. 1733	{ 1 360	{ Numerous pueblo, or cliff-dweller ruins, in good preservation.
Shoshone Cavern (shó shô'né).	Wyoming	Cody, Burlington Route	Sept. 21, 1909	36 Stat. 2501	210	Cavern of considerable extent, near Cody.



Gran Quivira (grān kē-vē'rē).	New Mexico	(Mountainair, Santa Fe System. Port of call for steamships from Seattle.	{Nov. 1, 1909 {Nov. 25, 1919 Mar. 23, 1910	{36 Stat. 2503 {41 Stat. 1778 36 Stat. 2601	{1,560 {157 160	{One of the most important of earliest Spanish mission ruins in the Southwest. Monument also contains pueblo ruins. {Park of great natural beauty and historic interest as scene of massacre of Russians by Indians. Contains 16 totem poles of best native workmanship. {Unique natural bridge of great scientific interest and symmetry. Height 309 feet above water, and span is 278 feet, in shape of rainbow.
Rainbow bridge.	Utah	Pack trip from Navajo Mountain, Ariz., reached from Gallup, N. Mex., or Flagstaff, Ariz., Santa Fe System.	May 30, 1910	36 Stat. 2703	160	
Colorado.	Colorado	Grand Junction, Denver & Rio Grande Western.	May 24, 1911	37 Stat. 1681	13,883	Many lofty monoliths, and is wonderful example of erosion, and of great scenic beauty and interest.
Papago Saguaro (pā'pā-gō-sā-gwā'gō).	Arizona	(Phoenix or Tempe, Southern Pacific.	Jan. 31, 1914 Dec. 28, 1922	{38 Stat. 1991 {Ex. Order No. 3769.	{1,940.43	{Splendid collection of characteristic desert flora and numerous photographs. Interesting rock formations.
Dinosaur (dī'nō-sōr)	Utah	Watson, Uintah Railway	Oct. 4, 1915	39 Stat. 1752	80	Deposits of fossil remains of prehistoric animal life of great scientific interest.
Capulin Mountain (kā-pū'lin).	New Mexico	Folsom, Colorado & Southern.	Aug. 9, 1916	37 Stat. 1792	681	Cinder cone of geologically recent formation.
Verendrye (vēr-rōn-drē)	North Dakota	Sanish, Soo Line.	June 29, 1917	40 Stat. 1677	253.04	Includes Crowhigh Butte, peculiar mountain formation, from which Explorer Verendrye first beheld territory beyond Missouri River.
Casa Grande (kā'sā grān'dā).	Arizona	(Casa Grande, Southern Pacific.	{June 22, 1892 {Dec. 10, 1909 {Aug. 3, 1918 {June 7, 1926	{25 Stat. 961 {36 Stat. 2504 {40 Stat. 1818 {Pub. 342, 69 Cong.	{472.5	{These ruins are one of the most noteworthy relics of a prehistoric age and people within the limits of the United States. Discovered in ruinous condition in 1694.
Katmai (kā'tā'mī)	Alaska	(Sailing vessel from Kodiak, reached by steamship from Seattle.	{Sept. 24, 1918 {Sept. 5, 1923	{40 Stat. 1855 {Ex. Order No. 3897.	{1,087,990	{Wonderland of great scientific interest in the study of volcanism. Phenomena exist upon a scale of great magnitude. Includes "Valley of Ten Thousand Smokes."
Scotts Bluff	Nebraska	Gering, Union Pacific.	{Dec. 12, 1919 {May 9, 1924	{41 Stat. 1779 {Ex. Order No. 4008.	{1,893.83	{Region of historic and scientific interest. Many famous old trails traversed by the early pioneers in the winning of the West passed over and through this monument.
Yucca House ? (yūc-cā)	Colorado	Mancos, Denver & Rio Grande Western.	Dec. 19, 1919	41 Stat. 1781	9.6	Located on eastern slope of Sleeping Ute Mountain. Ruins of great archeological value; relic of prehistoric inhabitants.
Fossil Cycad.	South Dakota	Minekahta, C., B. & Q.	Oct. 21, 1922	42 Stat. 2286	320	Area containing deposits of plant fossils.
Aztec Ruin ?	New Mexico	Aztec, D. & R. G. W.	Jan. 24, 1923	42 Stat. 2295	4.6	Prehistoric ruin of pueblo type containing 500 rooms.
Hovenweep	Utah-Colorado	Mancos, D. & R. G. W.	Mar. 2, 1923	42 Stat. 2299	285.8	Four groups of prehistoric towers, pueblos, and cliff dwellings.
Pipe Spring	Arizona	Cedar City and Utah, U. P.	May 31, 1923	42 Stat., Proc. 1063.	40	Old stone fort and spring of pure water in desert region, serves as memorial to early western pioneer life.
Carlsbad Cave.	New Mexico	Carlsbad, Santa Fe System.	Oct. 25, 1923	Proc. 1679	719.22	Limestone cavern of extraordinary proportions and of unusual beauty.
Craters of the Moon.	Idaho	Arco, Oregon Short Line.	May 2, 1924	Proc. 1694	24,960	Weird volcanic region containing remarkable fissure eruption together with its associated volcanic cones, craters, lava flows, caves, natural bridges, and other phenomena.
Wupatki.	Arizona	Flagstaff, Santa Fe System.	Dec. 9, 1924	Proc. 1721	2,234.10	Prehistoric dwellings of ancestors of Hopi Indians.
Glacier Bay	Alaska	Juneau, by boat.	Feb. 26, 1925	Proc. 1733	1,164,800	Tidewater glaciers of first rank.

1 Estimated.      2 Donated to the United States.      3 From June 22, 1892, until Aug. 3, 1918, classified as a national park.

## NATIONAL MONUMENTS

## ADMINISTERED BY THE DEPARTMENT OF AGRICULTURE

[Number 15, total area, 601 square miles or 384,833.33 acres; chronologically in order of creation]

Name	Location	Approaches	Date of creation	Statute book reference to proclamation	Area (acres)	Special characteristics
Gila Cliff Dwellings (he'18). Tonto Jewel Cave.	New Mexico. Arizona. South Dakota.	Silver City, via Pinos Altos, Santa Fe system. Globe, Southern Pacific. Custer, Burlington Route.	Nov. 16, 1907 Dec. 19, 1907 Feb. 7, 1908	35 Stat. 2162. 35 Stat. 2168. 35 Stat. 2180.	160 1 640 1 1, 280	Numerous cliff-dweller ruins of much interest and in good preservation. Do. Limestone cavern of much beauty and considerable extent, limits of which are as yet unknown. Of much interest from geological standpoint as example of eccentric erosion and extinct volcanic action. Of much scenic beauty.
Wheeler	Colorado.	Wagon-Wheel Gap or Creede, Denver & Rio Grande Western.	Dec. 17, 1908	35 Stat. 2214.	300	{ Contains many objects of great and unusual scientific interest, including many glaciers. Is summer range and breeding ground of the Olympic elk. Extensive caves in limestone formation of much beauty; magnitude not entirely ascertained.. Spectacular mass of hexagonal basaltic columns, like an immense pile of posts. Said to rank with famous Giant's Causeway in Ireland. Contains cliff dwellings of much scientific and popular interest.
Mount Olympus	Washington.	{ Port Angeles by ferry from Seattle.	{ Mar. 2, 1909 Apr. 17, 1912 May 11, 1915	{ 35 Stat. 2247. 37 Stat. 1737. 39 Stat. 1726.	{ 299, 370 480	
Oregon Caves.	Oregon.	Grants Pass, Southern Pacific.	July 12, 1909	36 Stat. 2497.	800	
Devil Postpile.	California.	Laws, Southern Pacific, thence stage to Mammoth.	July 6, 1911	37 Stat. 1715.	960	
Walnut Canyon.	Arizona.	Flagstaff, Santa Fe system.	Nov. 30, 1915	39 Stat. 1761.	22, 075	
Bandelier (Bân-dê-lêr)	New Mexico.	Santa Fe, Santa Fe system, and Denver & Rio Grande Western.	Feb. 11, 1916	39 Stat. 1764.	38. 3	
Old Kasaan (kâ-sân)	Alaska.	Steamships, Seattle to Ketchikan.	Oct. 25, 1916	39 Stat. 1812.	593. 03	
Lehman Caves.	Nevada.	Ely, Nevada Northern.	Jan. 24, 1922	42 Stat. 2260.	250	
Timpanogos Cave.	Utah.	American Fork, U. P. system; D. & R. G. W.	Oct. 14, 1922	42 Stat. 2285.	7, 440	
Bryce Canyon.	do.	Cedar City, U. P. system; Marysville, D. & R. G. W.	June 8, 1923	42 Stat. Proc. 1664.	4, 480	
Chiricahua.	Arizona.	Willcox, Southern Pacific.	Apr. 18, 1924	Proc. 1692.	45, 967	
Lava Beds.	California.	Mount Hebron, Southern Pacific.	Nov. 21, 1925	Proc. 1755.		

†Estimated.

## NATIONAL MONUMENTS

## ADMINISTERED BY THE WAR DEPARTMENT

[Number, 10; total area, 158.1 acres; chronologically in order of creation]

Big Hole Battle Field	Montana	Divide, Union Pacific	June 23, 1910	5	
Cabrillo (kā-brél'yo)	California	{San Diego, Southern Pacific, and Santa Fe systems.	{Oct. 14, 1913 May 12, 1926	1	Site of battlefield on which battle was fought Aug. 9, 1877, between a small force of United States troops and a much larger force of Nez Perce Indians, resulting in a rout for the Indians. {Of historic interest because of discovery of the territory now partly embraced in the State of California by Juan Rodriguez Cabrillo, who at this point first sighted land on Sept. 28, 1542.
Mound City Group	Ohio	Chillicothe, B. & O., and N. & W.	Mar. 2, 1923	57	Famous group of prehistoric mounds in Camp Sherman Military Reservation.
Fort Wood	New York	New York City	Oct. 15, 1924	2.5	Site of the Statue of Liberty.
Castle Pinckney	South Carolina	Charleston; A. C. L., S. A. L., Southern.	do	3.5	Fortification built in 1810 to replace a Revolutionary fort.
Fort Pulaski	Georgia	Pulaski; Central of Georgia.	do	20	Built in 1810 to replace Fort Greene of the Revolution.
Fort Marion	Florida	St. Augustine; Florida E. C.	do	18.09	Fort built by Spaniards in 1686.
Fort Matanzas	do	do	do	1	Relic of Spanish invasion.
Meriwether Lewis	Tennessee	Hohenwald; N. C. & St. L.	Feb. 6, 1925	50	Contains grave of Captain Lewis of the Lewis and Clark Expedition.
Fort Niagara	New York	Lewiston; N. Y. Central	Sept. 5, 1925	.0074	Site for erection of cross to commemorate a cross erected by Father Millett in 1688 on what is now the Fort Niagara Military Reservation.



## ORGANIZATION OF THE NATIONAL PARK SERVICE

(Department of the Interior, Washington, D. C.)

Stephen T. Mather, director.  
 Arno B. Cammerer, assistant director.  
 A. E. Demaray, assistant in operations and public relations.  
 R. M. Holmes, chief clerk.  
 Isabelle F. Story, editor.

### FIELD SERVICE

#### GENERAL

(Yellowstone Park, Wyo.)

Horace M. Albright, assistant director (field).

#### CIVIL-ENGINEERING DIVISION

(Yellowstone Park, Wyo.)

Bert H. Burrell, acting chief civil engineer.

#### LANDSCAPE-ENGINEERING DIVISION

(730 South Los Angeles Street, Los Angeles, Calif.)

Daniel R. Hull, landscape engineer.

#### EDUCATIONAL DIVISION

(957 Regal Road, Berkeley, Calif.)

Ansel F. Hall, chief park naturalist.

### THE NATIONAL PARKS

Crater Lake, C. G. Thomson, superintendent, Medford, Oreg.  
 Glacier, Charles J. Kraebel, superintendent, Belton, Mont.  
 Grand Canyon, J. Ross Eakin, superintendent, Grand Canyon, Ariz.  
 Hawaii, A. O. Burkland, acting superintendent, Honolulu, Hawaii.  
 Hot Springs, Dr. Joseph Bolten, superintendent, Hot Springs, Ark.  
 Lafayette, George B. Dorr, superintendent, Bar Harbor, Me.  
 Lassen Volcanic, L. W. Collins, acting chief park ranger in charge, Red Bluff, Calif.  
 Mesa Verde, Jesse L. Nusbaum, superintendent, Mancos, Colo.  
 Mount McKinley, Henry P. Karstens, superintendent, McKinley Park, Alaska.  
 Mount Rainier, Owen A. Tomlinson, superintendent, Ashford, Wash.  
 Platt, King Crippin, superintendent, Sulphur, Okla.  
 Rocky Mountain, Roger W. Toll, superintendent, Estes Park, Colo.  
 Sequoia, John R. White, superintendent, Alder Creek headquarters via Three Rivers, Calif.  
 General Grant, John R. White, acting superintendent, Alder Creek headquarters via Three Rivers, Calif.  
 Sullys Hill, Wm. H. Beyer, acting superintendent, Fort Totten, N. Dak.  
 Wind Cave, Roy Brazell, superintendent, Hot Springs, S. Dak.  
 Yellowstone, Horace M. Albright, superintendent, Yellowstone Park, Wyo.  
 Yosemite, W. B. Lewis, superintendent, Yosemite National Park, Calif.  
 Zion, Richard T. Evans, acting superintendent, Springdale, Utah.

### THE NATIONAL MONUMENTS

Frank Pinkley, superintendent of southwestern monuments, Blackwater, Ariz.  
 Aztec Ruin, Earl H. Morris, custodian, Aztec, N. Mex.  
 Capulin Mountain, Homer J. Farr, custodian, Capulin, N. Mex.  
 Carlsbad Cave, W. F. McIlvain, custodian, Carlsbad, N. Mex.  
 Casa Grande, Frank Pinkley, custodian, Blackwater, Ariz.  
 Chaco Canyon, Gus Griffin, custodian, Crown Point, N. Mex.  
 Colorado, John Otto, custodian, Grand Junction, Colo.  
 Craters of the Moon, Samuel A. Paisley, custodian, Arco, Idaho.

Devils Tower, John M. Thorn, custodian, Hulett, Wyo.  
El Morro, Evon Z. Vogt, custodian, Ramah, N. Mex.  
Gran Quivira, W. H. Smith, custodian, Gran Quivira, N. Mex.  
Montezuma Castle, Martin L. Jackson, custodian, Camp Verde, Ariz.  
Muir Woods, John T. Needham, custodian, Mill Valley, Calif.  
Natural Bridges, Zeke Johnson, custodian, Blanding, Utah.  
Navajo, John Wetherill, custodian, Kayenta, Ariz.  
Papago Saguaro, J. E. McClain, custodian, Tempe, Ariz.  
Petrified Forest, Wm. Cox Buehler, acting custodian, Holbrook, Ariz.  
Pinnacles, W. I. Hawkins, custodian, Hollister, Calif.  
Scotts Bluff, A. N. Mathers, Gering, Nebr.  
Sitka, Peter Trierschild, custodian, Sitka, Alaska.  
Tumacacori, John B. Bristol, custodian, Blackwater, Ariz.  
Verendrye, Adolph Larsen, custodian, Sanish, N. Dak.  
Wupatki, J. C. Clarke, custodian, Flagstaff, Ariz.

No superintendent has been appointed for the Lassen Volcanic National Park, nor have custodians been appointed for the Dinosaur, Katmai, Lewis and Clark Cavern, Rainbow Bridge, Shoshone Cavern, Yucca House, Fossil Cycad, Hovenweep, Pipe Spring, or Glacier Bay National Monuments.

# APPENDIX B

## STATISTICS

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Visitors to the national parks, 1911-1926.....  
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### Visitors to parks, 1911-1926

Name of park	1911	1912	1913	1914	1915	1916	1917	1918
Hot Springs.....	<sup>1</sup> 130,000	<sup>1</sup> 135,000	<sup>1</sup> 135,000	<sup>1</sup> 125,000	<sup>1</sup> 115,000	<sup>1</sup> 118,740	<sup>1</sup> 135,000	<sup>1</sup> 140,000
Yellowstone.....	23,054	22,970	24,929	20,250	51,895	35,849	35,400	21,275
Sequoia.....	3,114	2,923	3,823	4,667	7,647	10,780	18,510	15,001
Yosemite.....	12,530	10,884	13,735	15,145	33,452	33,390	34,510	33,497
General Grant.....	2,160	2,240	2,756	3,735	10,523	15,360	17,390	15,496
Mount Rainier.....	10,306	8,946	13,501	15,038	35,166	23,989	35,568	43,901
Crater Lake.....	<sup>1</sup> 4,500	5,235	6,253	7,096	11,371	12,265	11,645	13,231
Wind Cave.....	3,887	3,199	3,988	3,592	2,817	<sup>1</sup> 9,000	16,742	<sup>1</sup> 36,000
Platt.....	<sup>1</sup> 30,000	<sup>1</sup> 31,000	<sup>1</sup> 35,000	<sup>1</sup> 30,000	<sup>1</sup> 20,000	<sup>1</sup> 30,000	<sup>1</sup> 35,000	14,431
Sullys Hill.....	<sup>1</sup> 200	<sup>1</sup> 200	<sup>1</sup> 300	<sup>1</sup> 500	<sup>1</sup> 1,000	<sup>1</sup> 1,500	2,207	4,188
Mesa Verde.....	206	230	280	502	663	1,385	2,223	2,058
Glacier.....	<sup>1</sup> 4,000	6,257	12,138	14,168	14,265	12,839	18,387	9,086
Rocky Mountain.....					<sup>1</sup> 31,000	<sup>1</sup> 51,000	117,186	101,497
Hawaii.....						( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )
Lassen Volcanic.....						( <sup>2</sup> )	<sup>1</sup> 8,500	<sup>1</sup> 2,000
Mount McKinley.....							( <sup>2</sup> )	( <sup>2</sup> )
Grand Canyon.....								
Lafayette.....								
Zion.....								
Total.....	223,957	229,084	251,703	235,193	334,799	356,097	488,268	451,661

Name of Park	1919	1920	1921	1922	1923	1924	1925	1926
Hot Springs.....	<sup>1</sup> 160,490	<sup>1</sup> 162,850	<sup>1</sup> 130,968	<sup>1</sup> 106,164	<sup>1</sup> 112,000	<sup>1</sup> 164,175	<sup>1</sup> 265,500	<sup>1</sup> 260,000
Yellowstone.....	62,261	79,777	81,651	98,223	138,352	144,158	154,282	187,807
Sequoia.....	30,443	31,508	28,263	27,514	30,158	34,468	46,677	89,404
Yosemite.....	58,362	68,906	91,513	100,506	130,046	105,894	209,166	274,209
General Grant.....	21,574	19,661	30,312	50,456	46,230	35,020	40,517	50,597
Mount Rainier.....	55,232	56,491	55,771	70,371	123,708	161,473	173,004	161,796
Crater Lake.....	16,645	20,135	28,617	33,016	52,017	64,312	65,018	86,019
Platt.....	<sup>1</sup> 25,000	<sup>1</sup> 38,000	<sup>1</sup> 60,000	<sup>1</sup> 70,000	<sup>1</sup> 117,710	<sup>1</sup> 134,874	<sup>1</sup> 143,380	<sup>1</sup> 124,284
Wind Cave.....	26,312	27,023	28,336	31,016	41,505	52,166	69,267	85,466
Sullys Hill.....	4,026	9,341	9,100	<sup>1</sup> 9,548	8,478	8,035	9,183	19,921
Mesa Verde.....	2,287	2,890	3,003	4,251	5,236	7,109	9,043	11,356
Glacier.....	18,956	22,449	19,736	23,935	33,988	33,372	40,063	37,325
Rocky Mountain.....	169,492	240,966	<sup>1</sup> 273,737	<sup>3</sup> 219,164	218,000	224,211	233,912	<sup>1</sup> 225,027
Hawaii.....	( <sup>2</sup> )	( <sup>2</sup> )	<sup>1</sup> 16,071	27,750	41,150	52,110	64,155	<sup>1</sup> 35,000
Lassen Volcanic.....	<sup>1</sup> 2,500	<sup>1</sup> 2,000	<sup>1</sup> 10,000	<sup>1</sup> 10,000	<sup>1</sup> 9,500	<sup>1</sup> 12,500	<sup>1</sup> 12,596	18,739
Mount McKinley.....	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	47	<sup>4</sup> 34	<sup>4</sup> 62	<sup>4</sup> 206	<sup>4</sup> 533
Grand Canyon.....	37,745	67,315	67,485	84,700	102,166	108,256	134,053	140,252
Lafayette.....	<sup>1</sup> 64,000	<sup>1</sup> 66,500	<sup>1</sup> 69,836	73,779	64,200	71,758	73,673	101,256
Zion.....		3,692	2,937	4,109	6,408	8,400	16,817	21,964
Total.....	755,325	919,504	1,007,335	1,044,502	1,280,886	1,422,353	1,760,512	1,930,865

<sup>1</sup> Estimated.

<sup>2</sup> No record.

<sup>3</sup> Indicated loss in travel from 1921 due largely to better methods of checking and estimating employed.

<sup>4</sup> Actual park visitors; many miners and prospectors passed through park.



*Visitors to the national monuments in 1921-1926*<sup>1</sup>

Name	1921	1922	1923	1924	1925	1926
Aztec Ruin (New Mexico)-----			6,234	5,968	<sup>2</sup> 7,000	5,646
Capulin Mountain (New Mexico)-----	<sup>2</sup> 3,000	<sup>2</sup> 3,000	<sup>2</sup> 1,000	<sup>2</sup> 7,000	<sup>2</sup> 7,000	14,965
Carlsbad Cave (New Mexico)-----				<sup>2</sup> 1,280	1,794	10,904
Casa Grande (Arizona)-----	6,296	5,068	6,787	9,583	13,587	16,542
Chaco Canyon (New Mexico)-----					<sup>2</sup> 2,000	2,500
Colorado (Colorado)-----	<sup>2</sup> 5,500	<sup>2</sup> 6,000	<sup>2</sup> 7,000	<sup>2</sup> 8,000	<sup>2</sup> 9,000	<sup>2</sup> 9,000
Craters of the Moon (Idaho)-----					3,349	4,620
Devils Tower (Wyoming)-----	<sup>2</sup> 7,000	<sup>2</sup> 8,500	<sup>2</sup> 3,000	<sup>2</sup> 7,800	8,450	16,640
El Morro (New Mexico)-----	<sup>2</sup> 3,000	<sup>2</sup> 2,500	<sup>2</sup> 2,500	<sup>2</sup> 3,200	<sup>2</sup> 1,800	5,794
Grah Quivira (New Mexico)-----					<sup>2</sup> 1,000	1,577
Hovenweep (Utah-Colorado)-----					250	<sup>2</sup> 250
Katmai (Alaska)-----			15	17		
Montezuma Castle (Arizona)-----	<sup>2</sup> 4,500	<sup>2</sup> 6,000	<sup>2</sup> 7,400	<sup>2</sup> 7,500	<sup>2</sup> 9,000	12,385
Muir Woods (California)-----	<sup>2</sup> 87,400	<sup>2</sup> 90,370	91,253	92,391	93,643	97,426
Natural Bridges (Utah)-----			20	62		68
Navajo (Arizona)-----	.65	112		85	200	<sup>2</sup> 250
Papago Saguaro (Arizona)-----	<sup>2</sup> 3,000	<sup>2</sup> 8,000	<sup>2</sup> 6,000	<sup>2</sup> 10,000	<sup>2</sup> 30,000	<sup>2</sup> 53,000
Petrified forest (Arizona)-----	<sup>2</sup> 32,700	<sup>2</sup> 31,338	45,475	42,781	55,227	53,345
Pinnacles (California)-----			<sup>2</sup> 6,500	8,973	<sup>2</sup> 10,000	10,167
Pipe Spring (Arizona)-----					<sup>2</sup> 4,000	16,728
Rainbow Bridge (Utah)-----			142	115	250	<sup>2</sup> 300
Scotts Bluff (Nebraska)-----	<sup>2</sup> 6,000	<sup>2</sup> 6,000	<sup>2</sup> 20,000	<sup>2</sup> 35,000	<sup>2</sup> 24,000	<sup>2</sup> 27,000
Sitka (Alaska)-----						2,500
Tumacacori (Arizona)-----	<sup>2</sup> 5,000	<sup>2</sup> 5,100	<sup>2</sup> 6,000	<sup>2</sup> 8,800	<sup>2</sup> 10,500	13,683
Verendrye (North Dakota)-----	<sup>2</sup> 1,000		<sup>2</sup> 3,500		<sup>2</sup> 1,400	<sup>2</sup> 8,000
Wupatki (Arizona)-----					<sup>2</sup> 500	<sup>2</sup> 600
Yucca House (Colorado)-----					<sup>2</sup> 100	<sup>2</sup> 150
Total-----	164,461	171,988	212,826	248,555	294,050	384,040

<sup>1</sup> No records for other 5 national monuments.<sup>2</sup> Estimated.<sup>3</sup> Opened to public June 1, 1924.*Private automobiles entering the national parks during seasons 1919-1926*<sup>1</sup>

Name of park	1919	1920	1921	1922	1923	1924	1925	1926
Yellowstone-----	10,737	13,586	15,736	18,253	27,359	30,689	33,068	33,194
Sequoia <sup>2</sup> -----	3,852	5,657	7,139	7,886	9,796	11,032	14,273	26,503
Yosemite-----	12,109	13,418	18,947	19,583	27,233	32,814	49,229	74,885
General Grant-----	3,366	4,710	6,545	12,010	12,036	9,118	11,108	12,869
Mount Rainier-----	10,434	10,814	12,271	17,149	27,655	38,351	39,860	38,626
Crater Lake-----	4,637	5,158	7,892	9,429	15,377	19,301	19,451	26,442
Wind Cave <sup>3</sup> -----	8,240	7,686	9,078	10,096	13,570	17,200	22,598	28,332
Platt <sup>3</sup> -----			21,848	<sup>4</sup> 30,000	<sup>4</sup> 50,000	<sup>4</sup> 57,400	<sup>4</sup> 60,000	45,796
Sullys Hill-----							2,271	4,484
Mesa Verde-----	436	570	651	969	1,255	1,803	2,197	3,054
Glacier-----	1,697	2,009	2,614	2,416	5,599	6,756	7,585	6,727
Rocky Mountain <sup>3</sup> -----	<sup>4</sup> 33,638	<sup>4</sup> 50,562	<sup>4</sup> 57,438	<sup>4</sup> 52,112	<sup>4</sup> 51,800	<sup>4</sup> 53,696	<sup>4</sup> 58,057	<sup>4</sup> 50,407
Hawaii <sup>3</sup> -----					8,025	10,150	12,650	<sup>4</sup> 6,500
Lassen Volcanic <sup>3</sup> -----							2,646	5,423
Grand Canyon-----	1,575	3,260	5,104	7,890	11,731	13,052	19,910	22,849
Lafayette <sup>3</sup> -----	<sup>4</sup> 7,000	<sup>4</sup> 10,000	9,958	8,650	8,600	12,561	9,381	15,361
Zion-----		644	604	662	1,446	1,993	3,928	4,796
Total-----	97,721	128,074	175,825	197,105	271,482	315,916	368,212	406,248

<sup>1</sup> Automobiles entering parks with or without licenses, to and including Sept. 30, 1924.<sup>2</sup> License required only for Giant Forest Road.<sup>3</sup> No license required.<sup>4</sup> Estimated.

*Automobile and motor-cycle licenses issued during seasons 1922-1926*

Name of park <sup>1</sup>	1922		1923		1924		1925		1926 <sup>2</sup>	
	Auto- mobiles	Motor cycles	Auto- mobiles	Motor cycles	Auto- mobiles	Motor cycles	Auto- mobiles	Motor cycles	Auto- mobiles	Motor cycles
Yellowstone.....	20, 158	149	25, 357	131	28, 912	158	31, 488	144	38, 940	134
Sequoia <sup>3</sup> .....	3, 197	1	4, 350		3, 684		4, 312		10, 481	
Yosemite.....	16, 335	134	28, 587	136	17, 696	89	23, 203	68	29, 302	82
General Grant.....	6, 217		8, 037		6, 524		7, 023		4, 880	
Mount Rainier.....	10, 906	118	17, 208	299	19, 267	321	21, 753	23	20, 531	60
Crater Lake.....	8, 101	42	10, 864	61	16, 033	44	15, 471	37	23, 249	35
Mesa Verde.....	967		1, 146	2	1, 812	2	2, 075	3	3, 222	3
Glacier.....	1, 648	1	4, 900	5	3, 981	2	6, 039	3	5, 240	
Grand Canyon.....									9, 707	
Zion.....									3, 596	
Total.....	\$ 67,429	\$ 445	\$ 100,449	634	97,809	616	111,364	278	149,148	314

<sup>1</sup> No licenses required for Wind Cave, Hot Springs, Platt, Hawaii, Lassen Volcanic, Sullys Hill, Rocky Mountain, and Lafayette National Parks. No roads in Mount McKinley Park.

<sup>2</sup> Number of licenses formally reported to Washington, to and including Sept. 30, 1926.

<sup>3</sup> Licenses required only for Giant Forest Road.

<sup>4</sup> Includes 665 autos in 1922, 525 in 1923, 276 in 1924, 319 in 1925, and 205 in 1926, the owner of which surrendered Yosemite Valley Highway Association certificates in lieu of payment of entrance fee.

<sup>5</sup> Includes 399 complimentary permits in 1922, 436 in 1923, and 244 in 1924.

<sup>6</sup> Includes 1 complimentary permit.

<sup>7</sup> Licenses not required in certain parks because of small road mileage or unimproved condition of roads (see footnote 1). Licenses also not required for travel on unimproved roads in other parks. No charge for license issued for operating cars on official business.

*Receipts collected from automobiles and motor cycles during seasons 1922-1926*

Name of park <sup>1</sup>	1922	1923	1924	1925	1926 <sup>2</sup>
Yellowstone.....	\$150, 287. 00	\$189, 375. 00	\$217, 235. 00	\$236, 520. 00	\$119, 286. 50
Sequoia <sup>3</sup> .....	7, 995. 00	10, 875. 00	9, 210. 00	10, 780. 00	10, 481. 00
Yosemite.....	81, 128. 00	101, 312. 00	87, 278. 00	114, 556. 00	75, 179. 00
General Grant.....	3, 063. 50	3, 975. 00	3, 287. 00	3, 511. 50	2, 440. 00
Mount Rainier.....	27, 330. 50	43, 309. 00	48, 488. 50	54, 405. 50	21, 488. 00
Crater Lake.....	20, 404. 50	27, 223. 50	40, 130. 00	38, 714. 50	26, 594. 50
Mesa Verde.....	1, 450. 50	1, 691. 50	2, 719. 00	3, 114. 00	3, 377. 00
Glacier.....	2, 303. 00	7, 926. 50	5, 528. 50	9, 338. 50	5, 240. 00
Grand Canyon.....					9, 707. 00
Zion.....					1, 798. 00
Total.....	293, 962. 00	385, 687. 50	413, 876. 00	470, 940. 00	275, 591. 00

<sup>1</sup> No licenses required for Wind Cave, Hot Springs, Platt, Hawaii, Lassen Volcanic, Sullys Hill, Rocky Mountain, and Lafayette National Parks. No roads in Mount McKinley Park.

<sup>2</sup> Received in Washington to and including Sept. 30, 1926. Rates for 1926 reduced.

<sup>3</sup> License required only for Giant Forest Road.

*Statement of appropriations made for, and revenues received from, the various national parks and national monuments, and expenditures made therefrom during the fiscal years 1917-1926,<sup>1</sup> inclusive; also appropriations for the fiscal year 1927*

Name of the national park	Appropriations		Revenues	
	Appropriated	Expended	Received	Expended
Hot Springs:				
1917.....			\$35, 611. 75	\$31, 302. 98
1918.....			28, 883. 44	42, 822. 02
1919.....	<sup>2</sup> \$140, 000. 00	\$140, 000. 00	52, 109. 15	32, 130. 36
1920.....			45, 682. 85	35, 710. 33
1921 (deficiency).....	60, 000. 00	60, 000. 00	57, 807. 00	74, 021. 19
1922.....			55, 339. 15	85, 043. 85
1923.....	63, 900. 00	63, 289. 88	56, 669. 16	( <sup>3</sup> )
1924.....	67, 600. 00	67, 294. 82	44, 769. 53	
1925.....	78, 000. 00	} \$85, 222. 98	<sup>5</sup> 60, 577. 70	
1925 (deficiency).....	11, 800. 00			
1926.....	72, 100. 00	69, 537. 19	<sup>5</sup> 55, 421. 75	
1927.....	71, 000. 00			

Footnotes at end of table on page 76.

*Statement of appropriations made for, and revenues received from, the various national parks and national monuments, etc.—Continued*

Name of the national park	Appropriations		Revenues	
	Appropriated	Expended	Received	Expended
<b>Yellowstone:</b>				
1917.....	\$8,500.00	\$8,500.00	\$54,795.69	\$53,775.61
1918.....	10,500.00	9,645.82	71,393.56	96,812.34
1919.....	334,920.00	332,583.03	42,775.50	( <sup>3</sup> )
1919.....	<sup>6</sup> 3,259.48	539.44		
1920.....	255,500.00	253,577.15	120,027.61	
1920 (deficiency).....	71,026.64	71,026.64		
1921.....	278,000.00	285,992.28	158,806.84	
1921 (deficiency).....	8,000.00			
1922.....	350,000.00	348,746.54	165,014.53	
1923.....	361,800.00	361,687.86	203,140.02	
1924.....	368,000.00	395,139.06	299,132.97	
1924 (deficiency).....	27,700.00			
1925.....	372,800.00	394,590.99	318,861.60	
1925 (deficiency).....	24,103.00			
1926.....	396,000.00	393,190.23	356,193.56	
1927.....	398,000.00			
<b>Sequoia:</b>				
1917.....	22,300.00	15,605.28	10,326.60	415.04
1918.....	50,000.00	50,000.00		
1918.....	25,000.00	24,578.71	13,402.53	25,508.45
1919.....	30,510.00	30,420.98	9,772.52	( <sup>3</sup> )
1920.....	35,000.00	34,824.54	15,899.00	
1921.....	36,000.00	35,732.79	19,584.99	
1922.....	86,000.00	85,961.84	20,086.27	
1923.....	78,000.00	77,671.62	23,917.22	
1924.....	120,000.00	119,590.60	24,220.21	
1925.....	136,000.00	141,066.42	19,981.08	
1925 (deficiency).....	5,810.00			
1926.....	71,710.00	72,412.22	26,356.16	
1927.....	73,750.00			
<b>Yosemite:</b>				
1917.....	250,000.00	249,987.45	53,500.66	55,098.45
1918.....	235,000.00	226,368.29	65,865.65	88,975.62
1919.....	255,000.00	254,294.64	57,520.03	( <sup>3</sup> )
1920.....	200,000.00	197,611.29	85,601.54	
1921.....	300,000.00	300,645.44	95,894.47	
1921 (deficiency).....	3,000.00			
1922.....	300,000.00	295,079.94	131,797.51	
1923.....	280,060.00	278,218.50	148,860.60	
1924.....	295,000.00	294,768.42	173,732.28	
1925.....	309,000.00			
1925 (deficiency).....	21,414.00	324,511.05	137,200.14	
1926.....	252,714.00			
1927.....	256,640.00	243,703.59	231,209.14	
<b>General Grant:</b>				
1917.....	2,000.00	1,999.55	1,153.78	536.97
1918.....	2,000.00	1,999.97	1,801.63	3,951.88
1919.....	4,500.00	4,481.51	1,063.90	( <sup>3</sup> )
1920.....	6,000.00	5,992.79	1,870.83	
1921.....	5,300.00	5,300.00	2,663.37	
1922.....	6,000.00	5,981.24	3,480.45	
1923.....	6,500.00	6,419.88	3,180.16	
1924.....	50,000.00	49,874.91	4,847.73	
1925.....	14,175.00	15,175.95	2,907.54	
1925 (deficiency).....	1,180.00			
1926.....	12,180.00	11,986.37	3,298.55	
1927.....	12,300.00			
<b>Mount Rainier:</b>				
1917.....	30,000.00	29,999.19	14,346.80	17,617.04
1918.....	75,000.00	74,846.67	17,241.25	34,715.96
1919.....	24,600.00	24,552.28	17,336.47	( <sup>3</sup> )
1920.....	32,500.00	32,446.01	22,153.76	
1921.....	40,000.00	39,819.34	24,967.79	
1922.....	150,000.00	149,497.31	22,286.59	
1923.....	106,800.00	105,721.05	29,133.17	
1924.....	133,000.00	135,813.76	43,014.33	
1924 (deficiency).....	<sup>8</sup> 13,000.00			
1925.....	100,000.00	116,361.80	51,395.58	
1925 (deficiency).....	5,230.00			
1926.....	106,500.00	101,777.55	56,631.25	
1927.....	111,000.00			
<b>Crater Lake:</b>				
1917.....	8,000.00	7,999.88	4,565.25	
1918.....	15,000.00	14,738.44	5,505.72	
1919.....	13,225.00	13,203.84	5,958.21	( <sup>3</sup> )
1920.....	28,225.00	28,162.05	8,327.73	



*Statement of appropriations made for, and revenues received from, the various national parks and national monuments, etc.—Continued*

Name of the national park	Appropriations		Revenues	
	Appropriated	Expended	Received	Expended
<b>Crater Lake—Continued,</b>				
1921.....	\$25,300.00	\$25,223.40	\$9,784.98	-----
1922.....	25,300.00	25,290.41	15,277.53	-----
1923.....	32,000.00	31,787.77	18,139.75	-----
1924.....	35,000.00	34,822.56	30,495.93	-----
1925.....	30,700.00	32,623.41	39,789.49	-----
1925 (deficiency).....	1,980.00			
1926.....	35,980.00	35,865.26	41,486.50	-----
1927.....	37,160.00	-----	-----	-----
<b>Platt:</b>				
1917.....	8,000.00	8,000.00	434.11	\$138.28
1918.....	7,180.00	7,179.84	1,010.40	1,699.88
1919.....	7,500.00	7,485.05	482.63	( <sup>3</sup> )
1920.....	6,000.00	5,980.24	486.59	-----
1921.....	9,000.00	8,900.70	726.20	-----
1922.....	7,500.00	7,238.26	519.80	-----
1923.....	7,500.00	7,325.62	65.30	-----
1924.....	10,000.00	9,982.48	74.14	-----
1925.....	10,000.00	11,780.97	60.50	-----
1925 (deficiency).....	1,920.00			
1926.....	17,920.00	17,818.60	54.13	-----
1927.....	12,400.00	-----	-----	-----
<b>Wind Cave:</b>				
1917.....	2,500.00	2,499.87	1,632.60	1,013.04
1918.....	2,500.00	2,498.40	4,082.60	8,006.53
1919.....	4,000.00	3,988.77	2,533.15	( <sup>3</sup> )
1920.....	4,000.00	3,987.24	3,714.15	-----
1921.....	5,000.00	4,971.55	2,918.20	-----
1922.....	7,500.00	7,500.00	3,785.25	-----
1923.....	7,500.00	7,443.84	3,869.00	-----
1924.....	10,000.00	9,934.56	3,856.50	-----
1925.....	10,000.00	10,954.71	4,232.61	-----
1925 (deficiency).....	960.00			
1926.....	10,960.00	11,827.07	5,934.54	-----
1927.....	10,275.00	-----	-----	-----
<b>Mesa Verde:</b>				
1917.....	10,000.00	9,999.00	130.14	( <sup>9</sup> )
1918.....	10,000.00	9,913.05	2,763.75	-----
1919.....	18,000.00	17,022.44	3,348.66	-----
1920.....	11,000.00	10,959.69	3,317.95	-----
1921.....	14,000.00	13,929.71	3,771.35	-----
1922.....	16,400.00	16,339.30	1,273.72	-----
1923.....	43,000.00	42,812.62	3,690.10	-----
1924.....	35,000.00	36,685.21	4,071.65	-----
1924 (deficiency).....	3,000.00			
1925.....	42,500.00	43,169.93	3,599.45	-----
1925 (deficiency).....	1,895.00			
1926.....	42,835.00	42,596.97	3,221.15	-----
1927.....	72,300.00	-----	-----	-----
<b>Glacier:</b>				
1917.....	110,000.00	108,148.16	3,202.40	1,352.75
1918.....	150,000.00	114,362.82	4,438.22	9,026.86
1919.....	80,000.00	79,958.69	2,624.53	( <sup>3</sup> )
1920.....	85,800.00	85,000.00	7,253.85	-----
1920 (deficiency).....	11,849.12	81,572.94	-----	-----
1921.....	95,000.00	107,847.30	10,513.20	-----
1921 (deficiency).....	12,564.09			
1922.....	195,000.00	194,803.03	6,082.71	-----
1923.....	178,700.00	178,515.70	10,732.67	-----
1924.....	225,000.00	227,133.13	19,759.23	-----
1925.....	281,000.00	290,221.44	15,328.71	-----
1925 (deficiency).....	9,260.00			
1926.....	184,960.00	172,888.11	21,311.72	-----
1927.....	167,745.00	-----	-----	-----
<b>Rocky Mountain:</b>				
1917.....	10,000.00	9,964.24	871.27	( <sup>9</sup> )
1918.....	10,000.00	9,922.10	598.75	-----
1919.....	10,000.00	9,993.94	307.50	-----
1920.....	10,000.00	9,924.85	1,507.78	-----
1921.....	40,000.00	39,945.40	537.25	-----
1922.....	65,000.00	64,923.10	2,695.41	-----
1923.....	73,900.00	73,153.99	3,077.08	-----
1924.....	74,280.00	74,000.03	582.38	-----
1924 (deficiency).....	26,171.00	122,805.78	3,183.83	-----
1925.....	93,000.00			
1925 (deficiency).....	4,540.00	82,259.56	2,538.35	-----
1926.....	84,660.00			
1927.....	87,000.00	-----	-----	-----

*Statement of appropriations made for, and revenues received from, the various national parks and national monuments, etc.—Continued*

Name of the national park	Appropriations		Revenues	
	Appropriated	Expended	Received	Expended
<b>Hawaii:</b>				
1919.....	\$750.00	\$731.40		
1920.....	750.00	747.52		
1921.....	1,000.00	125.00		
1922.....	10,000.00	9,645.16		
1923.....	10,000.00	9,969.03	\$775.00	
1924.....	10,000.00	9,658.74	1,460.00	
1925.....	10,000.00	9,377.05	760.00	
1925 (deficiency).....	1,260.00			
1926.....	15,560.00	13,349.54	2,450.00	
1927.....	18,000.00			
<b>Lassen Volcanic:</b>				
1917.....			81.25	(3)
1918.....			118.05	
1921.....	2,500.00	2,410.90		
1922.....	3,000.00	2,922.41		
1923.....	3,000.00	2,963.42	228.66	
1924.....	3,000.00	2,865.61	277.27	
1925.....	3,000.00	2,914.93	170.96	
1925 (deficiency).....	100.00			
1926.....	10,000.00	9,783.06	135.97	
1927.....	12,700.00			
<b>Grand Canyon:</b>				
1919.....			525.03	(3)
1920.....	40,000.00	39,874.27	399.32	
1921.....	60,000.00	59,948.45	8,305.43	
1922.....	100,000.00	99,966.55	4,872.02	
1923.....	75,000.00	73,906.35	7,508.72	
1924.....	125,400.00	124,798.40	12,655.42	
1925 (without year).....	100,000.00	63,757.24		
1925.....	116,000.00	118,729.19	12,550.06	
1925 (deficiency).....	4,360.00			
1926.....	192,360.00	189,579.00	15,806.45	
1927.....	132,000.00			
<b>Mount McKinley:</b>				
1922.....	8,000.00	7,792.88		
1923.....	8,000.00	7,850.61		
1924.....	8,000.00	7,730.85		
1925.....	11,020.00	11,533.00	68.93	(3)
1925 (deficiency).....	700.00			
1926.....	13,800.00	13,575.86	135.45	
1927.....	18,700.00			
<b>Lafayette:</b>				
1919.....	10,000.00	9,972.42		
1920.....	10,000.00	9,930.06		
1921.....	20,000.00	19,997.73		
1922.....	25,000.00	24,992.99		
1923.....	25,000.00	24,819.20		
1924.....	30,000.00	29,785.89		
1925.....	34,700.00	36,995.82		
1925 (deficiency).....	2,820.00			
1926.....	34,190.00	33,636.66		
1927.....	34,000.00			
<b>Zion:</b>				
1917 (deficiency).....	15,000.00	14,963.81		
1920.....			511.50	(3)
1921.....	7,300.00	8,825.96	524.00	
1921 (deficiency).....	1,585.07			
1922.....	10,000.00	9,968.62	414.95	
1923.....	10,000.00	9,727.39	584.37	
1923-24 (deficiency).....	133,000.00	144,066.88	913.25	
1924.....	13,750.00			
1925.....	15,190.00	16,790.71	195.80	
1925 (deficiency).....	1,560.00			
1926.....	20,000.00	19,968.90	479.50	
1927.....	22,000.00			
<b>Protection of national monuments:</b>				
1917.....	3,500.00	2,586.66		
1918.....	5,000.00	4,832.70	225.00	(11)
1919.....	10,000.00	9,473.10	320.75	
1920.....	8,000.00	7,802.92	123.50	
1921.....	8,000.00	7,838.99	123.20	
1922.....	12,500.00	12,019.98	39.00	
1923.....	12,500.00	11,385.55	135.38	
1924.....	12,500.00	11,774.15	23.50	
1925.....	20,750.00	20,343.75	57.00	
1925 (deficiency).....	1,230.00			
1926.....	46,980.00	46,752.31	72.00	
1927.....	21,270.00			

*Statement of appropriations made for, and revenues received from, the various national parks and national monuments, etc.—Continued*

Name of the national park	Appropriations		Revenues	
	Appropriated	Expended	Received	Expended
Casa Grande National Monument:				
1917.....	\$900.00	(12)		
1918.....	900.00	(12)		
1919.....	900.00	(12)		
Improvement of Navajo National Monument, Ariz.: 1917.....	13 3,000.00	\$1,962.69		
Carlsbad Cave National Monument:				
1926.....	(14)		\$3,718.00	
1927.....	15,000.00			
National Park Service:				
1917.....	3,666.67	2,513.62		
1918.....	17,600.00	17,413.33		
1919.....	19,200.00	19,177.50		
1920.....	22,220.00	21,524.46		
1921.....	27,420.00	27,090.59		
1922.....	31,020.00	30,957.72		
1923.....	32,420.00	32,383.50		
1924.....	33,200.00	32,922.67		
1925.....	44,000.00	46,632.92		
1925 (deficiency).....	2,700.00			
1926.....	51,000.00			
1927.....	55,680.00			
Fighting forest fires:				
1922.....	25,000.00	9,618.30		
1923.....	25,000.00	17,764.16		
1924.....	25,000.00	6,526.02		
1925.....	20,000.00	20,000.00		
Emergency reconstruction:				
1925.....	20,000.00	16,818.17		
Emergency reconstruction and fighting forest fires:				
1926.....	40,000.00	80,000.00		
1926 (deficiency).....	40,000.00			
1927.....	40,000.00			
Accounting services:				
1923.....	6,000.00	5,216.60		
1924.....	6,000.00	5,992.11		
1925.....	6,000.00	5,530.52		
1926.....	6,000.00	5,899.19		
Construction of roads and trails:				
1925 (deficiency).....	1,000,000.00	1,000,000.00		
1926.....	1,500,000.00	1,500,000.00		
1927.....	2,000,000.00			
Insect control:				
1925-26 (deficiency).....	25,000.00	24,945.24		
1927.....	20,000.00			
Southern Appalachian:				
1925-26 (deficiency).....	20,000.00	12,453.27		
1927.....	(15)			

<sup>1</sup> For statement of appropriations and revenues prior to 1917 see 1920 Annual Report, pp. 354-358.

<sup>2</sup> Made available during fiscal years 1920 and 1921 by sundry civil acts approved July 19, 1919 (41 Stat. 204), and June 5, 1920 (41 Stat. 918).

<sup>3</sup> Expenditure of revenue for park purposes not authorized. Sundry civil act of June 12, 1917 (40 Stat. 153); Hot Springs, act of May 24, 1922 (42 Stat. 590).

<sup>4</sup> Appropriation transfer. See separate table.

<sup>5</sup> Includes \$15,855 from sale of lots in 1925; \$8,500 in 1926.

<sup>6</sup> Unexpended balance of 1918 War Department appropriation of \$20,000 made available under Interior Department during 1919. Sundry civil act of July 1, 1918 (40 Stat. 678).

<sup>7</sup> For purchase of private holdings.

<sup>8</sup> Made available during 1925, act of Mar. 4, 1925 (43 Stat. 1331).

<sup>9</sup> Expenditure of revenues from Mesa Verde and Rocky Mountain Parks for park purposes not authorized by statute.

<sup>10</sup> Appropriation for 1919 made under the name of Sieur de Monts National Monument.

<sup>11</sup> Expenditure of revenue for monument purposes not authorized.

<sup>12</sup> Expended under the direction of the Commissioner of the General Land Office.

<sup>13</sup> Expended under direction of Smithsonian Institution.

<sup>14</sup> \$25,000 of appropriation for protection of national monuments specifically made available for Carlsbad Cave.

<sup>15</sup> Unexpended balance of 1925-26 appropriation made available for expenditure in 1927. Act of July 3, 1926 (44 Stat. 857).



*Summary of appropriations for the administration, protection, and improvement of the national parks and national monuments, together with the revenues received, for the fiscal years 1917<sup>1</sup>-1926, inclusive*

Year	Department	Appropriation	Revenues
1917	Interior Department.....	\$537,366.67	
	War Department.....	247,200.00	
1918	Interior Department.....	530,680.00	
	War Department.....	217,500.00	
1919	Interior Department.....	963,105.00	
	War Department.....	50,000.00	
1920	-----	1,013,105.00	196,678.03
1921	-----	907,070.76	316,877.96
1922	-----	1,058,969.16	396,928.27
1923	-----	1,433,220.00	432,964.89
1924	-----	1,446,520.00	513,706.36
1925	-----	1,892,601.00	663,886.32
1926	-----	3,027,657.00	670,920.98
1927	-----	3,258,409.00	826,454.17
	-----	3,698,920.00	-----

<sup>1</sup> For summary of appropriations and revenues prior to 1917 see 1920 Annual Report, p. 359.

<sup>2</sup> The revenues from the various national parks were expendable during the years 1904 to 1918, inclusive, with the exception of those received from Crater Lake, Mesa Verde, and Rocky Mountain National Parks, the revenues from which were turned into the Treasury to the credit of miscellaneous receipts.

*Statement of amounts transferred under the authority contained in the appropriation acts to transfer 10 per cent from one appropriation to another*

Year	Amount	From	To
1924-----	\$3,000	Yosemite National Park.....	Mount Rainier National Park.
1924-----	1,000	do.....	Mesa Verde National Park.
1924-----	1,000	Zion National Park.....	Do.
1924-----	1,900	Mesa Verde National Park.....	Glacier National Park.
1924-----	800	Grand Canyon National Park.....	Do.
1924-----	200	Yellowstone National Park.....	Do.
1925-----	1,000	Hot Springs National Park.....	Zion National Park.
1925-----	500	Grand Canyon National Park.....	Do.
1926-----	1,000	Yellowstone National Park.....	Wind Cave National Park.
1926-----	913	do.....	Sequoia National Park.
1926-----	1,062	Rocky Mountain National Park.....	Mount Rainier National Park.

## APPENDIX C

### REPORTS OF OFFICERS IN CHARGE OF THE NATIONAL PARKS AND ENGINEERING AND EDUCATIONAL DIVI- SIONS

#### HOT SPRINGS NATIONAL PARK

Dr. JOSEPH BOLTEN, Superintendent, Hot Springs, Ark.

##### GENERAL STATEMENT

The total receipts of the pay bathhouses for this year were \$522,001.68, as compared with \$428,401.31 for the fiscal year 1925.

The net profits reported for 18 pay bathhouses aggregated \$175,031.45. Only one pay bathhouse reported a deficit this year, amounting to \$2,911.75. Total profits, including deficits for this fiscal year, amounted to \$172,119.70 as against \$105,137.65 for last year.

The baths given were as follows: Complimentary, 2,859; paid, 699,700; at the United States free bathhouse, 79,692; at the Leo N. Levi Memorial Hospital Bathhouse, 6,066, making a grand total of 788,317 baths as compared with the grand total of 729,483 baths given during the previous year.

##### THE SPRINGS

The springs, 46 in number, are located on the Central Avenue slope of Hot Springs Mountain. The estimated daily flow is 850,000 gallons of hot water with an average temperature of 142° F. The water is collected and distributed to the Army and Navy General Hospital, the United States free bathhouse, the Leo N. Levi Memorial Hospital Bathhouse, and 19 pay bathhouses, all of which are under Government supervision. Daily temperature and flow readings of certain springs were continued.

##### ADMINISTRATION

The park is in charge of the superintendent, who has supervision over all matters pertaining to the park and its management and to the general sanitation and control of all bathhouses receiving hot water, as well as control over all employees connected with the bathhouses.

The park personnel is divided into the following departments: Administrative, police, maintenance and free bathhouse, and clinic.

##### RECEIPTS AND EXPENDITURES

###### Receipts:

Water rent.....	\$40,261.10
Ground rent.....	200.00
Privilege fees—	
Registered physicians' continuance fee.....	\$4,070.00
Physicians' examination fee.....	50.00
Physicians' registration fee.....	30.00
Bath attendants' certification fee.....	1,718.00
Masseurs' certification fee.....	507.00
Commissary concession.....	5.00
	<hr/>
	6,380.00
Miscellaneous—	
Sale of attendants' badges.....	12.65
Sale of unserviceable property.....	68.00
	<hr/>
	80.65
Total, deposited to credit of miscellaneous receipts.....	46,921.75

The last remaining city lot belonging to the park was disposed of at public auction for the sum of \$4,300. The amount was deposited to the credit of a special fund available for improvement of the park. The unexpended balance of this fund is \$24,300.91.

The following expenditures were made by the park from its appropriations:

For administration, protection, and maintenance-----	\$67,574.05
For construction of physical improvements-----	693.72
For construction and reconstruction of roads (from the National Park Service road budget)-----	23,997.92
Total expenditures-----	92,265.69

#### CONSTRUCTION, MAINTENANCE, AND REPAIRS

*Superintendent's residence.*—The heating system was overhauled, and repairs were made to the toilets and hot and cold water systems. The floors in the front porch and one rear porch were replaced by new flooring and were painted. Copper screening of the house was completed. Woodwork of the kitchen and pantry was painted.

*Fountain street residence.*—Minor repairs were made as needed.

*Free bathhouse building.*—A high pressure gas line was laid to the bathhouse by the public utilities company, and the boilers were fitted with new burners for the use of gas instead of coal. The hot air ventilating ducts were patched and plastered and other minor repairs made. Screen doors and windows were repaired. Leaks in the pools were stopped by the use of chemicals. Fittings were renewed in the various rooms. The heating plant was overhauled and repaired. Shelves were built in the laboratory and storerooms. Benches in the dressing and cooling rooms were renamed. New door frames and double acting hinges were installed on 11 doors in the bathing section of the building. The walls and ceilings of some of the clinic room were replastered, and the lower half of the rooms repainted where necessary. A new floor was laid in one room. Portions of the exterior of the building were repainted.

*Shop.*—The shop was entirely remodeled. The lower floor was entirely concreted, and a new floor was laid in the second story and in the attic. The first floor was planned to house rolling equipment. The upper story was divided into carpenter shop, storeroom, blacksmith and machine shop, and general workroom. Overhead shafting and pulleys were installed, an electric power line was run to the shop, and a power motor, electric floor grinder, band saw, and drill press were set up. Benches and shelves were placed where needed. New windows were placed in the building, and the entire exterior was stuccoed and the woodwork painted. A concrete road was constructed in the rear of the building for the use of motor vehicles. All livestock was disposed of.

*Greenhouse.*—An addition 12 by 36 feet was constructed to complete the greenhouse, and the heating plant was overhauled.

Repairs were made to other minor buildings as required.

*Comfort stations.*—The interior of the comfort stations on Bath House Row was repainted and the plumbing repaired.

*Grounds.*—About 100 maple, elm, and poplar trees were planted along the lower slopes of Hot Springs Mountain, along the park front, at the superintendent's residence and in front of the shop building. About 2,500 bulbs were planted on Bath House Row, about the residences and the free bathhouse, for spring blooming. A new hedge was planted for about half the length of Bath House Row, and privet hedge was planted at the official residence and around the free bathhouse. Shrubbery was purchased and planted along Bath House Row, about the office building, and at the free bathhouse and superintendent's residence. Crêpe myrtle and hedge grown in our own small nursery were planted at advantageous places in the park. New squares of concrete were placed in the walks where needed.

*Roads.*—The road program begun last year was continued. Roads on all the mountains were reconstructed, the turns made larger and road beds widened to permit two-way traffic. Graveling of roads with material from our own gravel pits was begun, and 8 miles of road were gravel surfaced. All road work has been done by force account and with our own equipment.



*Trails.*—The mountain trails were cleaned up, repaired, and kept in excellent condition. Fallen timber and brush were removed from the mountain sides along the trails.

*Whittington Park.*—Fences around the park were repaired, some replacement being necessary. The two small tennis courts were converted into one large court, new fences being installed, and fresh clay and gravel surfacing used. Dead trees were cut and removed from the park.

*Electric lighting system.*—The electric lighting system on Hot Springs Mountain was overhauled, 3,600 feet of new wire and 36 new reflectors being installed and the light poles painted. The lighting system of Whittington Lake Park was completely overhauled. A 950-foot, 3-conductor park cable was installed on the White Way, completing the three-way system along Bath House Row.

*Water system.*—A 4-inch electric recording and integrating water meter was installed for periods of three months on the hot-water lines of the Lamar and Buckstaff Bathhouses for experimental purposes. A hot-water Trident disk meter was also purchased for use in determining the type of meter best adapted for use in connection with the hot water. No hot-water shortage was experienced during the busiest season this year, due to strict economy in the use of water and proper distribution in the various reservoirs.

*Public camp grounds.*—About 2 additional acres of ground were made ready for camp sites by clearing away underbrush, draining, filling, and leveling. Throughout the camp site low places were filled or tiled, drainage ditches were cut, and high places leveled. The swimming pool was drained and cleaned out and the wall of the dam repaired. Roads were scarified, graded, and graveled. Plumbing repairs were made and two water pipes installed to furnish an adequate water supply to the community house and the north end of the camp site. The lighting system was overhauled. The local telephone company installed a telephone in the camp. A community house, 20 by 42 feet, was constructed, native stones and cut logs composing the greater part of the building material. The floor was constructed of concrete and stone, and the building equipped with kitchen and laundry.

*Sanitary sewer.*—A 14-inch cast-iron sanitary sewer was installed by contract. The new sewer is 2,000 feet in length, extending from the north end of Bath House Row to a point 800 feet south of the superintendent's office, from which point it was continued approximately 1,000 feet south by the city of Hot Springs. It was installed in the arched conduit of Hot Springs Creek and replaced a 10-inch tile sewer. All the bathhouses along Bath House Row and the Army and Navy General Hospital have connected with the sewer, which also carries away the waste bath water.

*Miscellaneous.*—A large number of park benches were repaired and painted. The rolling equipment was kept in repair at considerable expense. Soil was placed on lawns and dead timber cut and used for fuel.

#### UNITED STATES FREE BATHHOUSE

The average number of persons bathed daily at the free bathhouse was 266, with a total of 79,692 baths given during the year. The total number of persons bathing was 3,570.

The total number of patients examined and treated in the free clinic was 3,570, of which 3,075 were venereal disease cases. The nonvenereal disease cases were referred to the Leo N. Levi Memorial Hospital clinic. The total number of examinations and treatments given during the year was 68,251.

The course of instruction for physicians was continued in the clinic. Special work was done by the bacteriologist along scientific lines, totaling 5,694 examinations of various specimens.

#### PAY BATHHOUSES

No new bathhouses were opened during the year. Examinations of the finances of the bathhouses showed that an increase in rates was advisable, and on October 10, 1925, each bathhouse was permitted to charge \$2 more per course of 21 baths.

The following tables show the business of the pay bathhouses for the fiscal year:

Bathhouse	Net amount received by attendants	Paid for redeemed tickets	Total bath receipts less redemptions	Receipts from massage, etc.	Total receipts	Total expenditures	Net profits
Alhambra	\$5,312.19	\$1,913.92	\$15,259.73	\$76.30	\$15,336.03	\$11,227.00	\$4,109.03
Arlington	13,432.67	8,436.19	63,442.31	5,517.49	68,959.80	29,792.20	39,167.60
Buckstaff	10,742.72	5,811.68	41,694.37	3,244.65	44,939.02	30,471.94	14,467.08
Eastman	4,212.60	2,365.29	16,994.11	672.21	17,666.31	12,177.68	5,488.63
Fordyce	7,243.65	4,022.73	31,934.32	4,121.90	36,056.22	27,015.73	9,040.49
Hale	8,571.80	1,221.04	28,905.56	444.00	29,349.56	18,355.50	10,994.06
Imperial	6,420.80	2,443.87	22,231.13	580.60	22,811.73	18,967.22	3,844.51
Lamar	11,813.48	7,112.79	42,911.46	4,741.82	47,653.28	30,627.96	17,025.32
Majestic	6,664.08	2,615.48	24,256.72	600.00	24,856.72	13,995.49	10,861.23
Maurice	12,138.80	6,479.01	47,743.34	5,342.05	53,085.39	38,258.43	14,826.96
Moody	3,748.45	1,841.10	12,795.50	370.95	13,166.45	8,986.00	4,180.45
Ozark	10,034.14	4,334.42	33,602.73	1,362.13	34,964.91	20,800.74	14,164.17
Ozark Sanatorium	3,019.23	1,202.00	9,485.20	105.80	9,591.00	6,708.00	2,883.00
Pythian (colored)	3,243.17	411.30	7,242.75	-----	7,242.75	10,154.50	12,911.75
Quapaw	9,047.54	3,340.68	32,981.57	2,368.50	35,350.07	27,314.29	8,035.78
Rockafellow	7,149.60	2,937.13	21,368.27	1,353.55	22,721.82	16,254.15	6,467.67
Superior	8,485.55	4,843.53	28,610.92	70.00	28,680.92	21,582.15	7,098.77
St. Joseph's Infirmary	1,528.04	832.93	5,172.92	-----	5,172.92	3,818.00	1,354.92
Woodmen of Union (colored)	1,770.90	311.22	4,416.78	-----	4,416.78	3,375.00	1,041.78
Total	134,579.41	62,476.31	491,049.74	30,971.95	522,001.68	349,881.98	172,119.70 12,911.75

<sup>1</sup> Deficit.

Bathhouse	Total baths sold	Baths re-deemed	Net paid baths sold	Paid baths given	Complimentary baths	Total baths given
Alhambra	30,918	3,524	27,394	27,155	0	27,155
Arlington	78,063	9,399	68,664	70,831	352	71,183
Buckstaff	63,301	7,818	55,483	55,227	382	55,609
Eastman	24,566	3,091	21,475	22,681	65	22,746
Fordyce	42,133	4,851	37,282	38,445	316	38,761
Hale	46,289	1,854	44,435	45,567	0	45,567
Imperial	37,877	3,717	34,160	36,692	122	36,814
Lamar	71,445	10,279	61,166	61,454	624	62,078
Majestic	37,692	3,450	34,242	33,885	96	33,981
Maurice	71,728	8,631	63,097	62,355	380	62,735
Moody	22,171	2,873	19,298	18,983	105	19,088
Ozark	58,570	3,928	54,642	50,683	234	50,917
Ozark Sanatorium	17,663	2,062	15,601	15,383	71	15,454
Pythian (colored)	17,557	828	16,729	16,760	0	16,760
Quapaw	51,593	4,885	46,708	45,097	91	45,188
Rockafellow	40,496	4,748	35,748	37,114	0	37,114
Superior	51,651	7,655	43,996	43,972	21	43,993
St. Joseph's Infirmary	9,177	1,264	7,913	8,005	0	8,005
Woodmen of Union (colored)	10,901	588	10,313	9,411	0	9,411
Total	783,791	85,445	698,346	699,700	2,859	702,559

### Hot water and ground leases

Name of bathhouse, etc.	Lessee	Tubs	Date of lease	Expiration
Alhambra	Alhambra Bathhouse Co.	18	Mar. 1, 1925	Feb. 29, 1928
Arlington <sup>1</sup>	Arlington Hotel Co.	90	Jan. 1, 1925	Dec. 31, 1944
Buckstaff	Buckstaff Bath House Co.	30	Jan. 1, 1912	Dec. 31, 1931
Eastman <sup>1</sup>	New York Hotel Co.	89	May 13, 1912	May 12, 1932
Fordyce	S. W. Fordyce, jr., trustee	30	Jan. 1, 1915	Dec. 31, 1934
Hale	Union & Mercantile Trust Co., trustee.	25	-----do-----	Do.
Imperial	Charles N. Rix	24	Jan. 1, 1912	Dec. 31, 1931
Lamar	Lamar Bath House Co.	26	Jan. 1, 1926	Dec. 31, 1945
Levi Memorial	Leo N. Levi Memorial Association	5	Nov. 1, 1924	Oct. 31, 1934
Majestic <sup>1</sup>	Majestic Hotel Co. (Inc.)	23	Jan. 1, 1913	Dec. 31, 1932
Maurice	Maurice Bath Co.	32	Jan. 1, 1912	Dec. 31, 1931
Moody	New Moody Hotel Co.	16	July 1, 1920	June 30, 1930

<sup>1</sup> Water used in private rooms in portion of tubs leased.

*Hot water and ground leases—Continued*

Name of bathhouse, etc.	Lessee	Tubs	Date of lease	Expiration
Ozark.....	Ozark Bath House Co.....	26	July 1, 1922	June 30, 1942
Ozark Sanatorium.....	Ozark Sanatorium Co.....	10	Sept. 17, 1922	Sept. 16, 1932
Pythian (colored).....	Pythian Bath House & Sanatorium Comm.	16	Dec. 16, 1924	Dec. 15, 1944
Quapaw.....	Quapaw Bath House Co.....	40	Feb. 1, 1922	Jan. 31, 1942
Rockafellow.....	Mahala J. Rockafellow.....	18	July 1, 1920	June 30, 1930
St. Joseph's Infirmary.....	Sister Superior.....	10	Feb. 1, 1924	Jan. 31, 1934
Superior.....	Superior Bath House Co.....	20	Feb. 15, 1916	Feb. 14, 1936
Woodmen of Union (colored).....	Supreme Lodge, Woodmen of Union.....	11	Mar. 1, 1922	Feb. 28, 1942
Arlington Hotel, ground lease.....	Arlington Hotel Co.....	-----	Mar. 21, 1914	Mar. 3, 1932
Hot Springs Mountain Observ- atory, ground lease.	Hot Springs Mountain Observatory Co.	-----	Jan. 1, 1926	Dec. 31, 1935

## SANITATION AND PUBLIC HEALTH MATTERS

Regular inspections were made in all the bathhouses. At least five inspections were made in the male and two in the female departments of each bathhouse monthly. Conditions were usually very satisfactory, since a high standard of cleanliness and sanitation is advantageous to the bathhouses.

Bacteriological examinations of the water supplied bathhouses have been made at intervals, but no contamination was found.

On the 1st of each month all bathhouse employees coming in personal contact with bathers were given a physical examination and conditions found were noted on their health cards. New employees were given complete physical examinations, including the Wassermann test, before being permitted to work in bathhouses.

Mosquito control work has been conducted wherever breeding places might be found. Particular care has been taken to keep the public camp grounds free from mosquitoes.

To increase the efficiency of bathhouse personnel and to provide more attendants, a school of instruction was held for one month. Lectures were given at intervals to bathhouse employees concerning their work.

Examinations have been held at irregular intervals for applicants for the position of masseur and masseuse in the bathhouses. Mental, oral, and practical, as well as complete physical examinations were given.

This service assisted the city of Hot Springs in the physical examination, typhoid and smallpox vaccination, and Wassermann test of all persons engaged in handling foodstuffs in the city. Cooperation is also given in examination of various specimens submitted to the laboratory.

## VISITORS

It is estimated that about 260,000 persons visited this park this year. A paved highway connecting Hot Springs and Little Rock, Ark., was formally opened on July 4, 1925, and an enormous influx of automobile tourists throughout the year has resulted.

## YELLOWSTONE NATIONAL PARK

HORACE M. ALBRIGHT, Superintendent, Yellowstone Park, Wyo.

The year 1926 in Yellowstone National Park has been marked by many outstanding circumstances and events, as follows:

1. There was an increase of 33,525 visitors during the travel season over the 1925 season; expressed otherwise as an increase of 22 per cent.

2. An extraordinary number of distinguished men and women were among the season's visitors. These included the Secretary of the Interior, Dr. Hubert Work; the Crown Prince of Sweden, Gustaf Adolf, and Crown Princess Louise and their royal party; the Governors of Maine, Vermont, Connecticut, Pennsylvania, South Carolina, Georgia, Florida, Alabama, Kentucky, Indiana, Illinois, Iowa, Minnesota, Oklahoma, New Mexico, Wyoming, Montana, Idaho, Utah, and Hawaii; United States Senators R. N. Stanfield, of Oregon, H. F. Ashurst,



of Arizona, J. B. Kendrick, of Wyoming, Peter Norbeck, of South Dakota; W. E. Borah and F. R. Gooding, of Idaho; and R. B. Howell, of Nebraska; United States Representatives Samuel S. Arentz, of Nevada; Albert Johnson of Washington; Adam M. Wyant and Milton W. Shreve, of Pennsylvania; Charles E. Winter, of Wyoming; N. J. Sinnott, of Oregon; James A. Frear, of Wisconsin; and Addison T. Smith, of Idaho; the presidents of the Union Pacific, Great Northern, Northern Pacific, Chicago, Milwaukee & St. Paul, and New York Central Railroads; Mr. John D. Rockefeller, jr., and many other prominent business and scientific men.

3. Road improvement was greatly advanced. The Lake Shore and Inspiration Point road projects were completed, the Firehole Cut-off nearly finished, and the Gallatin and East Entrance projects begun. Roads and trails were splendidly maintained.

4. Service to the public by rangers and ranger naturalists and by hotel, permanent camp, and transportation utilities was exceptionally good and prompted many compliments. The utilities made many betterments in their properties.

5. A mild winter with little snow favored all wild life and no losses occurred. Of course, lack of moisture created a serious summer fire hazard but this was successfully met by the rangers.

6. Cleanup of the roadsides with funds provided by a friend of the park proceeded very satisfactorily and has caused much favorable comment. Other landscape work of importance including removal of telephone poles from the roads was also completed.

7. There was a greater use of trails than ever before. Many horseback parties were on the trails for long periods and July 12 to August 4 over 200 members of the Sierra Club of California walked over a large part of the trail system.

8. Another effort to secure reservoir rights in the Bechler River Basin was made by Idaho irrigation interests. Hearings were held in Washington on the plan, and a special Senate committee visited the Bechler River region in August. The National Park Service and its friends are vigorously opposing the project.

9. Legislation to readjust the park boundaries and add the Teton Mountains was considered in Congress but enactment was delayed. A bill to improve game conditions north of the park and to add a small area to the park was passed and approved by the President on May 26.

10. On June 20 the park was formally opened for the 1926 season. Director Stephen T. Mather of the National Park Service was the principal speaker at ceremonies sponsored by rotary international. Motorists were admitted to the park on May 16 and the first trains were operated on June 17.

#### WEATHER

The early fall was characterized by unseasonably cold and stormy weather with unusually heavy snowfall for the season, giving promise of a long, cold, and snowy winter. But the months of November, December, January, February, and March were extremely mild with comparatively light snowfall. This long period of almost unbroken mild winter temperatures is unprecedented in 40 years of record. The lowest temperature recorded at Mammoth was 3° below zero on January 20 and also on March 29, which was the only temperature of zero or below during the winter. However, considerable below zero weather occurred at higher elevations, but the snowfall was light, and disappeared unusually early in the spring. Except for some of the higher passes, all the roads in the park were open by May 1. April and May were near normal in precipitation, but June and July were markedly deficient, the latter month being the driest July of record. The low humidity during the latter half of July resulted in high fire hazard. Rains beginning on August 7, introduced a cool, showery period that continued until the 21st. September was characterized by decidedly cool, windy weather with light precipitation. On the 24th, following a storm of unusual severity for the season, a temperature of 7° was recorded. This is the lowest September temperature for the past 31 years, and with the exception of zero recorded on September 22, 1895, it is the lowest for so early in the fall since the official record began in 1887. On an average there is only about one September in each 10 years that the temperature goes as low as 20°.

## TRAVEL IN 1926

Park visitors this year totaled 187,807 as compared with 154,282 last year, an increase of 33,525. The rail travel figures were 40,960 as compared with 44,786 last year, showing a decrease of 3,826. There was a decrease of 1,336 rail visitors at the west entrance; the north entrance shows a decrease of 2,880, and the east entrance an increase of 344 as compared with the preceding season. Two hundred and seventy-one came in via the Lander or Southern Gateway, as compared with 225 last year. The rail travel in the west entrance includes 813 Chicago, Milwaukee & St. Paul Railway passengers delivered by the busses of the Yellowstone Park Transportation Co. from Three Forks, Mont.

The automobile travel records for preceding seasons have been exceeded at all gateways this year. A total of 51,427 auto visitors entered at the east gate, 48,768 at the west, 27,424 at the north, and 13,830 at the south; grand total all gateways 141,449, exclusive of motor cycle and pre-season auto visitors.

The number of cars and people reported at the various developed camp grounds during the season is indicated as follows: Mammoth, 23,942 cars and 78,529 campers; Old Faithful, 33,736 cars and 110,644 campers; Lake, 26,819 cars and 87,966 campers; Canyon, 22,443 cars and 73,613 campers; Norris, 1,930 cars and 6,330 campers; Madison Junction, 3,481 cars and 11,417 campers; Thumb, 3,508 cars and 11,506 campers; Tower Falls, 4,417 cars and 14,487 campers. In addition, approximately 11,875 campers used the many camping places along the roads.

The west entrance continues to lead in rail travel, and the east entrance is the favorite gateway for motorists.

There was an increase of 36,487 auto visitors over the total of last year.

*Total season travel by entrances, 1926 and 1925*

Gateway	Rail visi- tors	By automobile		By motor cycle		By walk- ing, horse- back, etc., visitors	Pre- season visi- tors	Total visi- tors
		Cars	Visi- tors	Motor cycles	Visi- tors			
1926								
North-----	14, 127	9, 288	27, 424	26	38	371	1, 860	43, 820
West-----	18, 951	14, 862	48, 768	57	68	164	1, 062	69, 013
East-----	7, 611	15, 827	51, 427	49	66	326	126	59, 556
South-----	271	4, 349	13, 830	14	22	1, 257	38	15, 418
Total-----	40, 960	44, 326	141, 449	146	194	2, 118	3, 086	187, 807
1925								
North-----	17, 007	8, 796	26, 593	42	64	394	1, 471	45, 529
West-----	20, 287	9, 815	32, 713	34	42	86	173	53, 301
East-----	7, 267	11, 686	38, 901	40	58	275	66	45, 775
South-----	225	2, 771	8, 914	10	16	499	23	9, 677
Total-----	44, 786	33, 068	106, 329	126	180	1, 254	1, 733	154, 282

<sup>1</sup> This figure includes 813 Chicago, Milwaukee & St. Paul Railway passengers delivered from Three Forks, Mont., to the west entrance.

## ADMINISTRATIVE DEPARTMENT

*Headquarters office.*—During the fiscal year from four to eight clerks were employed in the headquarters office on general correspondence, files, personnel, purchasing, timekeeping, miscellaneous financial matters, information, and a wide range of other duties relating to this and to other parks. Approximately 17,011 pieces of mail were received and 21,812 dispatched.



*Appropriations.*—Appropriations made available since the date of the last report are as follows:

Act	Purpose	Amount
Jan. 20, 1925.....	Insect control (additional to 1925 report).....	\$900
May 10, 1926.....	Administration, protection, and maintenance <sup>1</sup> .....	369,300
Do.....	Construction, sewers and camp grounds, etc.....	28,700
Do.....	Insect control.....	3,500
Do.....	Road and trail construction <sup>2</sup> .....	98,000
Do.....	Road and trail surveys.....	8,000
Total.....		509,200

<sup>1</sup> \$7,940 reserved for Washington office expenditures and \$4,000 as a budget reserve.

<sup>2</sup> Authority has also been granted act of May 10, 1926, to obligate \$175,000 road and trail construction to be appropriated later.

Of 1926 fiscal year funds, \$1,000 was transferred to Wind Cave National Park and \$3,000 was returned to the Treasury.

*Revenues for 1926.*—Funds collected during the fiscal year 1926 and deposited to the credit of miscellaneous receipts in the United States Treasury were as follows:

Automobiles and motor cycles.....	\$248,649.88
Hotels and camps.....	44,731.86
Transportation company.....	48,489.06
Stores.....	13,503.23
Miscellaneous.....	816.43
Total.....	356,190.46

Revenues for the 1927 fiscal year will amount to approximately \$255,000, owing to the reduction in the automobile fee from \$7.50 to \$3 per car.

#### ENGINEERING DEPARTMENT

This department is in charge of Engineer Merrill F. Daum, aided by Asst. Engineer Cecil A. Lord.

*Road maintenance.*—The park road system consists of 302 miles of road designated as follows: Grand Loop 140.7, approach and connecting roads 79.1, secondary and roads to points of interest, 81.5 miles. During the 1926 season, 302 miles of park road, 28 miles of road in the Shoshone Forest, and 30 miles of road in the Teton Forest were maintained. Twenty-six crews, made up of 180 men, 69 teams, and 2 gravel trucks were engaged upon this work.

During the tourist season 107 miles of the Grand Loop were sprinkled twice daily, except during the long drought which dried up some of the sources of water supply, and the many mechanical breakdowns necessitated the laying off of sprinklers for repairs. The equipment used upon this work was two 2-horse sprinklers, six 4-horse sprinklers, and nine motor sprinklers. During July two additional sprinklers were used. A crew of four men maintained the sprinkler supply system, replaced 10 of the old wornout tanks with new 1,600-gallon redwood tanks, rebuilt many of the ditches, and installed additional supply pipe lines.

*Snow removal.*—Due to the light snowfall and the early spring the roads of the park were open to travel much earlier than usual. On May 3 the roads were open from Mammoth to Lake, Mammoth to Old Faithful, and West Yellowstone and Mammoth to Cooke City. On May 17 work started on blasting out the snow in Sylvan Pass and the East Entrance Road was opened June 1. Dunraven Pass was clear of snow May 25. On June 6 a crew started to blast snow on the Mount Washburn Road and this road was finally opened to travel June 24. The southern entrance was open on May 29.

*Road improvement.*—The first three-year program of improvements to roads in Yellowstone consists of 13 projects, of which the following have been completed or will be partially completed this season:

*Project No. 1, Firehole Cut-off.*—One and one-half miles of new construction through the Firehole River Canyon and 1½ miles of reconstruction from the canyon to Madison, a very scenic section of the park.



*Project No. 3, Lake Shore Road.*—Reconstruction of 12 miles of old road completed.

*Project No. 6, Firehole River Road.*—Widening  $1\frac{1}{2}$  miles of road above Project No. 1 completed.

*Project No. 7, West Thumb-Arnica Creek Road.*—Widening three-fourths mile of road around Bluff Point, 2 miles from West Thumb along Yellowstone Lake. Completed.

*Project No. 9, Mammoth-Tower Falls Road.*—Widening 2 miles of road and surfacing 3 miles. Completed.

*Project No. 11, Inspiration Point Road.*—Reconstruction of  $2\frac{1}{2}$  miles of road along the north rim of the Grand Canyon. Completed.

*Bridges.*—Five bridges including the Gardiner River and Yellowstone River bridges on the Cooke City Road were painted the National Park Service green. The Gardiner River bridge was also redecked, as were the Lava Creek and Blacktail Deer Creek bridges. The Lamar River bridge was realigned and repaired.

*Buildings.*—Two of the 30 by 80 foot military warehouses were remodeled into duplex apartment houses. The squad rooms of the guardhouse were made into offices for the chief civil engineer. A central heating plant was placed in the basement of the guardhouse and will furnish heat for the above apartments and offices. The three cells in Judge Meldrum's house were removed and the space altered to provide office space. At Slough Creek ranch two new log buildings were erected, one 16 by 30 feet, two stories high, and the other 20 by 40 feet, two stories high, with a lean-to 12 by 40 feet for use as a wagon and tool shed. One of the four residence buildings on the lower street was remodeled and an addition 12 by 16 feet was constructed on the north side to provide additional bedroom and closet space. A concrete basement was built on to the old portion and hot water heating system installed.

#### LANDSCAPE ENGINEERING ACTIVITIES

Both Landscape Engineers D. R. Hull and T. C. Vint visited the park during the year, the former to select sites for buildings and discuss building plans with our organization and with public-utility operators, the latter to confer and advise on road location, vista cutting, etc. Both men devoted time to clean-up projects and vista cutting in connection with this work. Buildings were designed for the Slough Creek ranches, plans were made for planting the transportation company's grounds at Gardiner, and advice was rendered on treatment of the grounds between the north arch and the Northern Pacific station.

The work of cleaning up the roadsides was continued last autumn and this spring with privately contributed funds. The Norris-Mammoth project was continued and completed with the exception of about a mile between the 13 and 14 mile posts south of headquarters and a half mile between the 18 and 19 mile posts. The road along the shore of Lake Yellowstone between Lake Hotel and Bridge Bay was cleaned up in May and June. This autumn, work will be carried on north of West Thumb and between Grand Canyon and Lake Junction. This clean-up work is greatly improving the scenic character of the park roads and has been the subject of a vast amount of favorable comment by tourists.

#### SANITATION DEPARTMENT

This department, in charge of the master plumber, cooperated closely with the engineering department in construction work.

1. *Public auto camp-ground development.*—Old Faithful.—Built 2 comfort stations, including 16 flush toilets, 4 washbasins, and 2 urinals. Built 300 tables. Installed 600 feet 3-inch galvanized-iron water pipe; 460 feet 2-inch, and 500 feet  $\frac{3}{4}$ -inch galvanized-iron pipe; and 700 feet 6-inch sewer pipe.

Camp Roosevelt.—Installed complete sewer system, including 2,000 feet 6-inch sewer pipe. Built four concrete manholes with cast-iron covers, and constructed sewerage tank 100 feet long by 10 feet wide by 8 feet deep with 3-inch plank cover.

Mammoth.—Built 1 comfort station and installed 10 flush toilets, 2 washbasins, and 1 urinal. Built shower building equipped with 8 hot and cold showers and 2 washbasins. Installed one 500-gallon hot water storage tank heated by a Tabasio type extra heavy tank heater made for burning coal. In-

stalled 680 feet of 1½-inch galvanized-iron water pipe and 370 feet ¾-inch for drinking water; also twelve ½-inch hose bibbs.

**Fishing Bridge Auto Camp.**—Constructed concrete sewerage treatment tank 130 feet long by 10 feet wide by 9 feet deep, with concrete top accessible by 12 cast-iron manhole covers. Built 200 tables. Installed 2,000 feet 6-inch sewer pipe and 680 feet 8-inch sewer pipe. Built 5 concrete manholes with cast-iron covers. Installed 600 feet ¾-inch galvanized-iron water pipe, 400 feet 1-inch, 1,000 feet 2-inch, 1,200 feet 2½-inch, and 650 feet of 3-inch. Built 3 comfort stations, including 24 flush toilets, 6 washbasins, and 1 urinal.

**Thumb Auto Camp.**—Built 1 comfort station, including 6 flush toilets and 1 urinal. Installed 250 feet 2-inch galvanized-iron pipe and 100 feet ¾-inch. Laid 80 feet 4-inch extra heavy soil pipe for sewer.

**Madison Junction Auto Camp.**—Built 2 comfort stations, including 16 flush toilets, 4 washbasins, and 2 urinals. Installed complete sewer system, including 1 concrete sewerage treatment tank 50 feet long by 10 feet wide and 8 feet deep, accessible by 6 cast-iron manhole covers. Laid 850 feet 6-inch sewer pipe. Built 50 tables. Constructed 30-foot concrete screening tank. Laid 3,000 feet 3-inch galvanized-iron pipe, 300 feet 1½-inch, and 500 feet ¾-inch.

2. *Mosquito control.*—The mosquito situation in the park was much improved due to extensive ditching and oiling at the Canyon, Lake, Tower Falls, West Thumb, Upper Basin, and Mammoth.

3. *Garbage and refuse disposal.*—All dump grounds cleaned up. Tins and glass buried. Garbage (not eaten by bears), paper, trash, and wood burned.

4. *Miscellaneous.*—Installed vacuum heating system to heat four buildings and chief civil engineer's office. Installed one Ideal water-tube steam boiler, capacity 4,450 square feet, connected to 1,400 square feet of cast-iron radiation. Laid 100 feet 5-inch steam main and 150 feet 4-inch and 250 feet 1½-inch vacuum return line. Laid 250 feet of Adso wood casing for underground steam mains, 4 inches thick, lined with asbestos and tin; also 250 feet of Adso wood casing for vacuum return lines 2 inches thick.

#### PROTECTION DEPARTMENT

The permanent personnel of this department consists of the chief ranger, S. T. Woodring, 4 assistant chief rangers, and 26 park rangers. There were two vacancies in the permanent personnel at the opening of the 1926 tourist season, which were filled by temporary appointments; 52 temporary park rangers were added to the force on June 16, making a total summer strength of 83.

The first conference of chief park rangers was held in Sequoia National Park on January 15 to 19, 1926. Chief Ranger Woodring attended this conference and presided as chairman. All members of the Yellowstone Park ranger force were called in conference at headquarters station on May 12 to 14, 1926. The ranger service is considered to have been greatly benefited by these meetings.

*Winter activities.*—Regular and special patrols were made throughout the fall, winter, and spring seasons for the observation and protection of wild life and the natural features of the park. Other activities have consisted of the capture and shipment of buffalo and elk, predatory animal hunting, and repairs and maintenance to telephone lines, buildings, and equipment. Two new log buildings have also been erected by ranger labor at the Slough Creek hay ranch.

*Summer activities.*—Fire, fish, and traffic patrols, information, guide, and lecture service, compilation of travel statistics for record purposes, communication service, checking entrance and exit travel, camp-grounds duty, police duty, and a wide range of other duties were carried on in furtherance of the convenience and pleasure of park visitors.

*Forest fires.*—There were no forest fires of importance during the year, although a total of 33 small fires were extinguished by park rangers during the tourist season.

*Trail construction, maintenance, and improvement.*—A total of 17½ miles of new trail was built, consisting of 8 miles of saddle-horse trail between Camp Roosevelt and the Yancey Ranch, which leads to local points of interest, including a beaver colony and Garnet Ridge; 4 miles of horse and foot trail leading from the Heart Lake Cabin to the summit of Mount Sheridan; 3 miles of foot trail known as the "nature" trail at Upper Geyser Basin; and 2½ miles of new trail on Crevice Mountain. The total trail mileage, exclusive of



game trails used on patrol, is 871. The entire trail system was cleared of down timber and repaired. This work consisted in part of several hundred feet of corduroy, a permanent horse bridge at Shoshone Creek, a permanent foot bridge across the channel between Lewis and Shoshone Lakes, and foot logs across all streams along the trail from Fountain to Yellowstone Lake, via Old Faithful, Shoshone Lake, Lewis Lake, Heart Lake, and the Upper Yellowstone.

*Fish planting.*—Fish planting activities this year, with comparative figures for 1924 and 1925, are reported as follows:

	1924	1925	1926
Total collection of black-spotted trout eggs from park waters.....	32, 000, 000	11, 748, 000	17, 000, 000
Number of eggs collected in park, hatched, and returned to park waters, or planted as eyed eggs.....	18, 544, 000	4, 336, 760	5, 891, 000
Total number of fish planted in park:			
Black spotted trout collected in park.....	18, 544, 000	4, 336, 760	5, 891, 000
Eastern brook trout received from Montana State hatchery.....	49, 400		
Rainbow trout received from Montana State hatchery.....		80, 000	
Loch Leven trout received from Montana State hatchery.....	41, 800		
Total fish plants for year.....	18, 635, 200	4, 416, 760	5, 891, 000
Total fish shipped to outside points.....		6, 726, 000	
Total eggs shipped to outside points.....			8, 494, 000

#### BUFFALO RANCH OPERATIONS

The activities at the buffalo ranch during the year have consisted in part of the care of the herd and the erection of a new machine shed 92 by 22 feet and a new oil house 9 by 10 feet in size. Fixtures were installed for running water in the ranch house and other buildings, involving the laying of 1,600 feet of pipe. One hundred acres of new land have been plowed and 2,216 feet of new fence built. Other activities have consisted of repairs and maintenance to buildings and equipment and the harvesting of the 1926 hay crop, which is estimated at 500 tons. Eighteen buffalo were captured and crated for shipment during the year. Six hundred and eleven tons of hay were fed at this point during the year, leaving a balance of approximately 400 tons which, together with the 1926 crop, makes a total of about 900 tons now on hand for use during the approaching winter season.

#### HAY RANCH OPERATIONS

Wild animal and horse feeding at the Slough Creek, Yancey, and Gardiner ranches during the year accounted for 76.79 tons of hay. There was very little wild animal feeding at these points. The balance on hand of the 1925 hay crop is 284 tons. The approximate yield this year at the above-named ranches is 322 tons. Other activities have consisted of maintenance and repairs to buildings and equipment and the erection of two new log buildings at the Slough Creek ranch; one of these buildings is 16 by 30 feet and two stories high, and the other is 20 by 40 feet and two stories high, with a lean-to 12 by 40 feet for use as a wagon and tool shed.

#### PREDATORY ANIMALS

Two hundred and forty-three coyotes were killed during the year as compared with 180 last year.

#### NATURAL FEATURES OF THE PARK

Observations of wild life, geysers and hot springs activities, and forests have been made by the park naturalist and by rangers and are briefly reported as follows:

*Wild-animal conditions.*—Wild-animal and forage conditions have been good throughout the year.

*Buffalo, Lamar River herd.*—The herd total on April 9, 1925, was 644, consisting of 323 males (bulls 162, steers 161) and 321 females. The total of the 1925 calf crop was 120, making a herd total of 764 on October 1, 1925.



Eight bulls, 1 steer, and 10 cows have been shipped since October 1, 1925. Two bulls and two steers have been killed because of fatal accidental injuries. Ten bulls, 3 steers, and 10 cows comprise the total losses during the year. The herd total on April 1, 1926, was 741, which, together with the 1926 calf crop numbering 125, makes a grand total of 866 buffalo in the Lamar River herd.

*Buffalo-Cold Creek Pelican Flats herd.*—The total count during the year was 65. There has been no apparent increase, and the herd total is estimated at 125.

*Mountain sheep.*—Actual counts during the winter and spring seasons total 217, as compared with 195 last year. The estimated total within the park is 600.

*Antelope.*—The largest count secured during the year was 497, as compared with 417 for the year preceding. The herd is in excellent condition; the annual increase this year should bring the herd total to approximately 600. There was a reported loss of 3 during the past winter season—2 were killed by coyotes and 1 died from natural causes.

*Moose.*—The actual counts of the past winter season total 103, as compared with 170 for last year and 121 for the year preceding, but these figures are not considered as indicating a decrease in the number of moose in the park. Conditions were not as favorable for making observations as during the two preceding years. Severe weather and deep snow offer the best opportunities for moose counts; last winter was not characterized by either. There was an observed loss of 4 from natural causes during the year and 6 were unlawfully killed by hunters in Idaho at points near the park boundary. There is an estimated total of 575 in the park.

*Deer.*—The largest count secured during the year was 798, as compared with 602 during the year preceding. Sixty-nine were killed by hunters at points adjacent to the park, 7 were killed by coyotes, and 3 died from natural causes. There is believed to be not less than 1,850 mule deer in the park and at near-by points along the Yellowstone and Gallatin Rivers.

The reports concerning white-tail deer that have been had during the year have not been verified and it is doubtful if there are any remaining in the park.

*Elk.*—Excellent weather and forage conditions have prevailed during the past winter season and elk losses were correspondingly slight. All reports indicate an unusually large calf crop this year. The losses from all causes during the past winter season are indicated as follows: 394 were killed by hunters at points adjacent to the park, as compared with 1,288 last year. The total reported winter kills were 15 as compared with 347 last year. Three died from accidental injuries and 76 were shipped to game preserves, public parks, and zoos. The total loss from all causes was 488 as compared with 1,703 last year. There was no need of artificial feeding although a few tons of hay were distributed in the vicinity of the elk corral in order to make the required number of captures for shipment. Approximately 1,100 tons of hay will be available for wild animal feeding at the various hay ranches in the park but it is believed that the range has adequate forage for all requirements of the elk. The estimated total of the Yellowstone elk, exclusive of the Jackson Hole herd, remains 20,000 because, on account of the mild winter and the fact that the herd was widely scattered, no counts could be made; however, there should have been a fair increase in the northern elk herd. The figure 20,000 is based on actual counts made in April, 1924, and April, 1925, when about 14,000 were seen in the northern part of the park and the watersheds of the Gallatin and Madison Rivers. Nevertheless, I find it hard to believe that there are so many elk in these sections, as my own observations have failed to confirm the large figures. In the Jackson Hole region, the Biological Survey officials state that there are now about 30,000 elk, a figure which also seems high to me. The Jackson Hole herd enjoyed a mild winter and there is a large accumulation of hay available for the coming winter. The State of Wyoming has opened the Enos Lake region to elk hunting and some moose may also be killed in the Jackson Hole this year.

*Bears, black and brown.*—Bears of this species are commonly seen throughout the park and latest counts indicate a total of approximately 75 that frequent points of interest along the loop road. This number includes 14 cubs. The total number of black and brown bear in the park is believed to be about 225.

*Bears, grizzly.*—Recent count of bears of this species are indicated as follows: Canyon 22, Lake 8, Old Faithful 5, Thumb 2, total 37, including 16 cubs. The presence of grizzlies at other points have been noted from time to time during the tourist season. There is believed to be not less than 80 bears of this species in the park.

*Beaver.*—The range and extent of beaver activity is increasing from year to year and there appears to be a normal annual increase.

*Other small animals.*—Marten, mink, weasel, skunk, otter, and fox are abundant; they are frequently seen by rangers on winter-season patrols. Woodchucks, porcupines, badgers, etc., are numerous at all points.

*Migratory birds.*—Ducks and geese have been abundant on all park waters. Swans have appeared at intervals along the Yellowstone and sandhill cranes have been nesting at three different points.

*Trees and insects.*—Two most injurious defoliating insects of park timber, the spruce budworm and the lodgepole-pine sawfly, have caused no damage this year. Apparently they have disappeared. The lodgepole needletyer occurred at West Yellowstone in about the same numbers as last year. To control it, a strip of lodgepole from 150 to 200 feet wide on each side of 10 miles of main and lateral highway was sprayed between June 26 and July 10. In general it may be said that insect conditions in the park forests are much better than for the past three years.

#### GEYSERS AND HOT SPRINGS

*Mammoth Hot Springs.*—A new hot spring has gushed from the old inactive formations on the opposite side of the road from Liberty Cap. The new formation or deposit covers an irregular area varying from 25 to 35 feet across on the upper level which is 5 to 6 feet above the ground level. This is the first marked activity in that particular series of old formations for a period of at least 20 years. Jupiter Terrace maintains great activity at the southern end. Angel Terrace was very active and beautiful the early part of the season and later dried up considerably. Old Angel at the higher level has recommenced activities and quite a bit of water is flowing over the terrace. Highland Terrace has lost none of its vitality of 1925. Mound Terrace was even more active than last season, but the activity of Minerva has been nearly a negligible quantity. Orange Spring is unchanged and the activity of the White Elephant continues to shift southward. Hymen itself is quite dry, but the spring at the base of the Devil's Thumb is quite large and the water very hot.

*Norris Geyser Basin.*—Constant Geyser resumed activity on June 16 after an extended period of quiescence. The first observed eruption of Mud Geyser, during the season, occurred on June 25; it played to a height of 50 feet. The next observed eruption occurred on August 12; it played again on August 21 and has since been active at intervals of every few days. Valentine plays every few days at irregular intervals. The Minute Man is noticeably weaker than in the spring. Coral and Vixen are, on the other hand, very active. Their eruptions, though small, are frequent and show much vigor. New Crater remains unchanged. The steam of Black Growler is now dispersed through several openings and the roar is remarkably less, although there is practically no change in the temperature (284° F.). Constant and Whirligig constitute the most spectacular exhibit of the basin. August was marked by noticeable increase in thermal activity over the preceding month, an increase that has coincided quite closely with the resumption of rains after the protracted dry period of July and early August.

*Upper Geyser Basin.*—Grand Geyser has been playing on the average interval of 15 hours, the Daisy at intervals of 82 minutes, and Riverside on the average interval of 7 hours and 45 minutes. Lone Star plays every 2 hours and the Oblong at least once every 24 hours. The Castle had only one active period during the season (July 28 to 30), when it played to the maximum height of 175 feet. Old Faithful has been playing on the average interval of 64 minutes. The observed eruptions of Giant, Giantess, and Beehive since October 15, 1925, are indicated as follows: Giant—October 25, February 12, May 24, and September 10; Giantess—December 1, March 20, and September 14; Beehive—December 1, May 24, August 30, and September 14. Giant did not display its usual power during the eruption of September 10. The eruptions of Giantess on December 1 and September 14 were characterized by great power and vigor; it did not display its usual power on March 20.



The first and only observed eruption of Cliff Spring in recent years occurred late in August. There was a marked increase in thermal activities throughout the basin during late August and September, which was no doubt largely influenced by the increase of rainfall over preceding months.

No marked changes have been observed in the geyser and hot springs activities at Lower Geyser Basin or at Thumb of Yellowstone Lake.

#### INFORMATION DEPARTMENT

A total of 32,894 people visited the information office at headquarters during the season, as compared with the corrected total of 35,568 during the season of 1925 and 30,677 during the season of 1924. A total of 106,649 free publications were distributed at the information office and ranger stations during the year and 6,636 Government publications, including 1,058 portfolios, were sold. Compare this total sale with 8,089 Government publications, including 2,291 portfolios, disposed of last year. In addition 1,027 books of other publishers were sold.

*Lecture service.*—This service at Mammoth Hot Springs consisted of three lectures each evening before audiences totaling approximately 58,532. Lectures were similarly conducted at Old Faithful, Lake, Canyon, and Tower Falls and were attended by approximately 54,852 persons at Old Faithful, 19,567 at Lake, 14,168 at Canyon, and 783 at Tower Falls, as compared with 72,160 at Mammoth, 40,282 at Old Faithful, and 1,194 at Tower Falls last year.

*Guide service.*—Two regular guide parties were conducted daily over the formations at Mammoth Hot Springs and Old Faithful. Special guide service was also furnished at these points upon request. Nature guide service was also conducted on regular schedules at Mammoth Hot Springs, Madison Junction, Old Faithful, Yellowstone Lake, and Tower Falls. The season total of all guide parties during the season of 1926 is indicated as follows: Mammoth Hot Springs, 11,496; Madison Junction, 1,484; Old Faithful, 32,920; Yellowstone Lake, 6,992; and Tower Falls, 1,193; as compared with 14,856 at Mammoth Hot Springs, 31,892 at Old Faithful, and 1,108 at Tower Falls last year.

*Nature trail.*—During the height of the season more than 2,500 persons stopped each day at Old Faithful. A careful study of the situation by the chief naturalist shows that the two ranger naturalist guides at this point could reach but 20 per cent of the visitors. In order to serve the others without adding to the staff every feature of the Formation Trail and Black Sand Trail was completely labeled with all available information. Arrows at each point indicate the route to be followed. About 2 miles of foot trail was built to Observation Point, Solitaire Geyser, and many other interesting springs of this region. This loop trail, subsidiary to the two formation trails, has been developed as a nature trail, all flowers, birds' nests, trees, and other features of the trail being labeled for the visitors.

#### ELECTRICAL DEPARTMENT

*Electric system.*—The following table shows the total production of the power plant and disposition of current as compared with similar data for the fiscal year 1925.

The peak load for the year was 204 kilowatts as compared with 164 kilowatts last year.

	1924-25	1925-26
Total production in kilowatt-hours.....	600,680.00	684,290.00
Sold to park operators.....	100,126.67	96,318.00
Consumed for street lighting.....	21,086.00	26,596.00
Balance, consumed by Government buildings, for power and lighting, lost on lines, etc.....	479,467.33	583,374.00

*Telephone system.*—Twelve miles of new line were built to Bechler River. Thirty-one hundred old poles were reset on the Government lines in the park. Sixteen miles of new telephone lines were constructed between Norris Junction and Fountain ranger station by the Yellowstone Park Hotel Co. and the National Park Service; 25-foot cedar poles and two 6-pin fir cross-arms were used, and 8 wires were placed, which provides 2 metallic circuits, and 1 phantom



circuit for the hotel company and the National Park Service. This new line was located out of sight in the timber wherever possible and permitted the dismantling of the two old lines that were along the roadside. There are 379 miles of telephone lines in the park—96 miles grounded, 263 miles metallic, and 36 miles phantom.

#### PROPERTY AND TRANSPORTATION

Under the direction of the steward and master of transportation 2,899 tons of material, equipment, and supplies were moved from railroad terminals to headquarters. From headquarters 11 trucks were operated through the park supplying road camps, construction camps, etc. The total mileage of the trucks was approximately 73,505. A maximum of 16 men were engaged in the warehouse and in the transportation work. A total of 98,809.84 ton-miles were hauled.

#### MECHANICAL DEPARTMENT

The mechanical department made repairs to all trucks in use; overhauled all trucks and Government-owned touring cars, freighters, caterpillars, air compressors, etc. The blacksmith overhauled all dump wagons, road graders, and small equipment of all kinds, and did horseshoeing. Winter activities in this department consist of completely overhauling all trucks and road machinery, and all shovels, picks, axes, etc., are rehandled and sharpened. In the saddle shop, harness, tents, and other canvas and leather equipment were patched, sewed, and otherwise repaired.

#### PAINTING DEPARTMENT

The master painter and his assistants painted the roofs of all buildings at park headquarters with the exception of red-tile roofs. All steel bridges in the park were painted with the exception of two bridges between Mammoth and Gardiner and three bridges on Tower Falls Road. Approximately 900 new signs were made, painted, repaired, and touched up. Most of the time during January, February, March, April, and May was given to redecorating interiors of buildings at headquarters. Three sets of quarters were finished throughout, also two new sets of quarters for engineering division employees and office building for engineers. Miscellaneous work of all kinds, such as glazing, etc., was carried on in paintshop, and all floors at hospital were varnished.

#### IMPROVEMENT BY PUBLIC UTILITIES AND INDIVIDUAL OPERATORS

*Yellowstone Park Hotel Co.*—Mammoth.—A great deal of work done on renovating of hotel in way of painting and new equipment—shades, rugs, etc. Added three rooms and two bathrooms to Mr. Nichols's residence. Repairs on McDonald and Lindelef residences. Installed new electric range and transformer and meter in Mr. Child's residence.

Old Faithful.—An engine of 150 horsepower was installed, which will complete lighting of hotel grounds. Installed new 75-kilowatt generating stand and switchboard for same. Put in concrete washing place for garbage cans and other similar utensils. Repaired sewer system. Put in carbonator machine for buffet. Transportation bunkhouse moved and placed on foundation. Put in a network of fire lines and ten 2-stream 2½-inch fire hydrant. All annunciator lines to all rooms were rewired with heavy weatherproof wire. Installed new 6-inch galvanized-iron pipe line to reservoir. Remodeled kitchen. Installed outside fire protection. A great deal of work was done in the way of painting floors and rooms. Main part of main building reshungled. Additional fire escapes installed.

Lake.—New mangle and other new machinery installed in laundry. Boys' dormitory washroom equipped with toilets and shower baths. Outside fire protection installed. New storage reservoir built. Painting, calcimining, etc., in a number of rooms.

Canyon.—Roof of hotel was painted. New rooms for kitchen crew built in basement. New officers' dining room built. Entire drainage system in rear of hotel installed. A great deal of work was done in painting, calcimining, and renovating rooms and halls in hotel.

*Yellowstone Park Transportation Co.*—Gardiner.—Finished garage, machine shop, and five residences under construction last year. Purchased 20 Lincoln cars, 1 Ford runabout, and 1 Ford truck for line crew.

**Old Faithful.**—Moved bunkhouse to new location and started erection of new drivers' washhouse.

**Canyon.**—Remodeled drivers' bunkhouse and built new washhouse and started addition to mess house.

**Yellowstone Park Boat Co.**—Old boathouse torn down and new one, 20 by 40 feet, built. New warehouse built. New speed boat, 2 new motor boats, and 10 new rowboats purchased.

**Yellowstone Park Camps Co.**—Mammoth.—Remodeled five employees' dormitories, replacing all canvas with lumber, and built in permanent windows; built eight 12 by 20 feet and twelve 12 by 12 feet all-lumber lodges in public automobile camp; constructed an addition to Mr. Goodwin's quarters, approximately 20 by 28 feet, and an addition, 16 feet wide by 60 feet long, to horse barn; replaced upper part of laundry building with new roof, approximately 15 feet wide by 70 feet long.

**Old Faithful Camp.**—Constructed a laundry building, 16 by 30 feet, for employees; 12 log and frame lodges, 12 by 20 feet; and 36 log and frame lodges, 12 by 12 feet.

**Lake Camp.**—Constructed, in the Fishing Bridge Auto Camp, a lunch counter and delicatessen building, T-shaped, consisting of 2 wings, each 28 feet wide by 60 feet long, and installed 39 canvas and frame lodges, which were moved from the main camp. At the Lake Camp the newest part of the main building, which was a log structure 48 feet wide by 140 feet long, was entirely remodeled, the dining room being newly finished, the kitchen newly equipped, and baths, flush toilets, barber shop, dispensary, etc., installed. The following additions to this building were constructed: On the north side, a building 60 feet wide by 164 feet long, which houses guests' dining room, part of the kitchen, and the employees' dining room; an addition, 48 feet wide by 80 feet long, adjoining new building, and in rear of old building, which houses bakery, pantry, storeroom, meat refrigerator, vegetable room, and a part of the main kitchen; a building for a curio store, 36 feet wide by 50 feet long, in rear of main building, with an entrance off the lobby; a building 30 feet wide by 20 feet long, used as registration desk, transportation company office, and general office; a building 30 feet wide by 30 feet long, which serves as barber shop, dispensary, and hall; an addition 44 feet wide by 130 feet long, on the south end of main building, used as a recreation hall and housing baths and toilet rooms. Also constructed a boiler-house building, 30 by 50 feet; a new linen-room building of log and frame, 20 feet wide by 45 feet long; 10 log and frame lodges, 12 by 20 feet; 32 log and frame lodges, 12 by 12 feet; built 4 new fire-hose houses and equipped them with hose for fire protection; converted one of permanent log buildings into an employees' laundry, installing stationary tubs; constructed a frame and log building, 12 by 16 feet, for housing dry split wood.

**Canyon.**—Constructed a boiler house, 30 feet wide by 50 feet long; 8 log and frame lodges, 12 by 20 feet; and 37 frame and log lodges, 12 by 12 feet.

**Camp Roosevelt.**—Constructed building of log and frame, 18 feet wide by 36 feet long, for bathhouse and toilet rooms; built annex in rear of main building off kitchen, 16 feet wide by 30 feet long, for employees' dining room; constructed four log and frame cabins, 12 by 14 feet.

**Sylvan Pass.**—Constructed large flush toilet and comfort station for female employees; constructed an addition to main building in the rear, to be used as an employees' dining room, size 20 feet wide by 48 feet long.

**Thumb.**—Nineteen tents were moved to this place from Lewis Lake for the purpose of housekeeping lodges in the public automobile camp, also a temporary delicatessen was equipped and operated; constructed 5 new canvas and board lodges; began the construction of a building for lunch counter and delicatessen, L-shaped, consisting of 2 wings, each being 24 feet wide by 50 feet long.

**Henry P. Brothers, baths.**—Installed two new bathtubs and 1,250 feet 1½-inch galvanized-iron pipe for hot-water line.

**George Whittaker, merchant.**—Mammoth.—Built new boiler room to accommodate heating plant; also built new coal house and laundry room and new porch on kitchen. Painted roof on store and all buildings at Canyon.

**C. A. Hamilton, merchant.**—Commenced construction of new restaurant and delicatessen adjoining present building. Commenced rebuilding filling station with 40-foot frontage at Old Faithful. Completed addition to Fishing Bridge store and painted entire building. Built rack for draining crank cases adjoining filling station. Built similar one at Old Faithful. Installed two new

liquid carbonic-soda fountains with Frigidair—one at Lake and one at Old Faithful public auto camp.

*Pryor & Trischman.*—*Park Curio Shop.*—Extensive improvements to Devil's Kitchen on terraces; painting and improvements to camp store; new parking space provided in front of curio shop, also minor improvements to shop.

*J. E. Haynes, official photographer.*—*Mammoth.*—Installed a 42-inch Simplex ironer in laundry. A plank sidewalk, 4 by 30 feet, was laid outside the dormitory. Installed 4 steel filing cases, 4-tier each, in office. A cement sidewalk,  $3\frac{1}{2}$  by 16 feet, two pieces, was laid outside the shop; public drinking fountain installed. A sidewalk, 3 by 36 feet, was laid outside residence. A Berkefield filter, capacity 30 gallons per hour, and one International filter, capacity 400 gallons per hour, were installed in the laboratory.

*Canyon.*—An International filter, capacity 400 gallons per hour, and coagulator were installed in laboratory. Public drinking fountains installed outside shop.

*Lake.*—New counters and cabinets were installed in shop. Ten illuminated outside showcases, assorted sizes, were placed at Old Faithful (4), at Canyon (4), and at Mammoth (2).

#### FRANCHISES AND PERMITS

On February 13, 1926, the Secretary of the Interior approved a new franchise contract in favor of Haynes's Picture Shops (Inc.). This contract runs for the period January 1, 1926, to December 31, 1945.

#### DEPARTMENT OF JUSTICE—UNITED STATES COMMISSIONER'S COURT

Hon. John W. Meldrum, commissioner since 1894, presiding. Proceedings were had in 39 cases during the year. There were 32 convictions and 7 acquittals. A total of \$500 in fines, exclusive of costs, was imposed. There were 31 cases involving violations of traffic regulations, 2 cases involving violations of camp-fire regulations, 2 cases involving violations of the Federal prohibition act, 1 case of trespass and unlawful hunting on park lands, 1 case of alleged rape, 1 case of breaking and entering, and 1 case involving the charge of defacing geyser formations.

#### POST OFFICE DEPARTMENT

Receipts showed an increase of about 5 per cent over last year. Increase in business showed principally in the general delivery department, and the carrier service around the park.

#### DEPARTMENT OF THE INTERIOR

*Inspection service.*—For several weeks during the summer, Inspectors Charles L. Gable, Wilson A. Blossom, and Sheridan Ferree were in Yellowstone Park examining books of the public utilities and observing their operations and those of the National Park Service. August 21–24, Mr. E. K. Burlew, administrative assistant to the Secretary, accompanied by Chief Inspector J. F. Gartland, visited the park on inspection.

*Geological survey.*—The usual inspections of water-gauging stations were made regularly during the summer, and work was begun on the installation of a self-recording gauge on the Gardiner River, near park headquarters.

#### DEPARTMENT OF COMMERCE

*Bureau of Fisheries.*—Egg collecting at Lake Yellowstone and Fish Lake was begun early this year, owing to disappearance of snow and ice. Conditions were much better for collection of spawn at Lake Yellowstone than they were last year, and a better take resulted. However, otter increased at Fish Lake, and took a large toll of spawning trout, thus reducing the collections of eggs at this point. The total egg collections for the season was 17,000,000, of which 3,234,000 were hatched and planted as fingerlings in the park and 2,657,000 were planted in the eyed stage. Shipments of eggs or fry outside the park totaled 8,494,000. District Supervisor C. F. Culler again had personal charge of fish cultural work in Yellowstone.



## DEPARTMENT OF AGRICULTURE

The Assistant Secretary of Agriculture, Hon. R. W. Dunlap, visited Yellowstone Park July 11-13, inclusive.

*Weather Bureau.*—Mr. E. H. Fletcher, the local observer, was in charge throughout the year, and made many routine and special reports to us on weather conditions.

*Bureau of Entomology.*—Dr. H. E. Burke of this bureau was again on duty in the park studying forest insects and directing control work. His report under another heading shows that the insect problem is not nearly as acute now as it was two years ago.

## TREASURY DEPARTMENT

*Public Health Service.*—Mr. H. B. Hommon, sanitary engineer, visited the park twice during the summer and gave advice on our program for construction of sanitation facilities and improvement of camp grounds. No associate engineer was assigned to the park this year, all sanitary work being in charge of our master plumber. The Public Health Service continued to keep an assistant surgeon in the park to aid in safeguarding health. Dr. N. A. Strickland resigned on February 23, 1926, and on February 24 Dr. Leslie J. Stauffer succeeded him. On September 15, 1926, Doctor Stauffer resigned, and he was succeeded by Dr. Richard R. Brady, of Nebraska.

## HOSPITAL AND MEDICAL SERVICE

In the hospital, leased to Dr. George A. Windsor, of Livingston, Mont., the following cases were cared for: 60 accidents (37 minor, 23 major); 22 surgical operations (6 minor, 16 major); 7 contagious; 107 sick. A total of 2,015 were treated in the hotel and camp dispensaries. Resident Physician Stauffer attended to 116 office calls and 142 house calls.

## EXTENSION LEGISLATION

Carrying out the recommendations of the President's Coordinating Commission on National Parks and Forests, set forth in last year's report, Secretary Work asked the chairmen of the Public Lands Committees of the United States Senate and the House to introduce departmental bills providing for the adjustment of Yellowstone Park's boundary lines to conform to natural features and for adding the Teton Mountain area. S. 3427 was introduced March 5, 1926, and H. R. 9917 was presented to the House on March 2, 1926. Hearings were held on the latter bill March 26 and April 2, 6, 7, 17, and 24, and on the Senate bill April 27, 29, and 30.

During the hearings Idaho irrigation interests who were active in 1919 and 1920 saw an opportunity to try to secure the Bechler River Basin for a reservoir by proposing an amendment to the pending bills, eliminating the basin from the park in the boundary revision. The fight on this so-called Smith amendment held the bills in committee, and neither one was reported out. On July 2, 1926, the Senate adopted Resolution 235, authorizing a study of the problem on the ground, and an appropriation of \$3,500 was made to cover expenses of a special subcommittee. August 15 to August 18, members of both Senate and House Public Lands Committees under their respective chairmen, United States Senator R. N. Stanfield and Congressman N. J. Sinnott, visited Idaho and the southwest corner of the park, held hearings, and inspected the region affected. I was absent in Glacier Park at the time, but was ably represented by Mr. J. E. Haynes, acting director of our museum, and by Park Rangers Liek and Bicknell.

## GAME PRESERVE LEGISLATION

On March 26, 1926, the President approved Public No. 295, "An act to make additions to the Absaroka and Gallatin National Forests and the Yellowstone National Park, and to improve and extend the winter-feeding facilities of the elk, antelope, and other game animals in Yellowstone National Park and adjacent lands, and for other purposes." This legislation paves the way for establishing adequate winter-feeding grounds for park animals that stray beyond the north boundary. Public-spirited citizens, led by Mr. Thomas Cochran and Mr. George D. Pratt, have subscribed a fund for the acquisition of

ranch lands in the Yellowstone Valley north of the park, these to be turned over to the Federal Government for the cultivation of hay and for winter feeding grounds. The W. M. Hoppe ranch, of approximately 1,000 acres, was purchased in November, 1925, and has since been available for the ranging of elk and antelope. Other lands will be purchased this winter, but friends of the park who are aiding in this enterprise believe that Federal appropriations should be forthcoming to aid in the acquisition of this property, and it is likely that further legislation to this end will be discussed in the coming session of Congress. The lands needed to complete this project will cost approximately \$250,000, one-half of which will be subscribed privately. A total of 134.74 tons of hay was raised on the Hoppe ranch this year.

#### GLACIER PARK FIRES

On July 31 I was ordered to Glacier Park by the Secretary to assume charge of the forest-fire-fighting work there. I was on the fires for three weeks, with Chief Ranger S. T. Woodring and Assistant Chief Harry Trischman, of Yellowstone Park, Landscape Engineer T. C. Vint, and the Glacier Park organization. The last week of August I visited Rocky Mountain (Banff), Yoho, Kootenay, and Waterton Lakes National Parks in Canada, returning to Yellowstone headquarters August 30.

#### YOSEMITE NATIONAL PARK, CALIF.

E. P. LEAVITT, Acting Superintendent, Yosemite National Park, Calif.

##### ADMINISTRATIVE DEPARTMENT

*Headquarters Office.*—There were a number of changes in the office force during the year, and considerable difficulty was experienced in getting employees who have had the necessary training and experience to properly handle the more important work. The same number of office employees were carried during the past year as during the preceding year. Approximately 11,393 pieces of mail were received and 20,770 dispatched.

*Appropriations.*—The park operated under an appropriation of \$247,160, of which \$3,500 was devoted to construction of walks, sewer system, and water lines in the new Yosemite Village, and the balance to general operation and maintenance. In addition to these general park funds, there was made available for expenditure during the fiscal year 1926 \$349,900 for paving and reconstruction of roads in the park, with authority to obligate an additional \$300,000 for the same purpose.

*Revenues.*—Revenues collected during the year ended June 30, 1926, and deposited in the general fund of the Treasury were as follows:

Automobile and motor cycle permits-----	\$136,588.89
Hotels-----	5,010.00
Transportation-----	1,660.00
Stores-----	3,106.71
Miscellaneous-----	84,843.54
Total-----	231,209.14

There was a reduction in the automobile-permit fee of from \$5 to \$2 for the last half of the fiscal year, the loss in revenue being offset to some extent, however, by the increased number of automobiles entering the park.

##### WEATHER CONDITIONS

The winter season of 1925-26 was one of comparatively light snowfall throughout all of the Sierras so that all of the roads to the park opened earlier than usual. The Wawona Road was open and in travelable condition up to the middle of January, and the Tioga Road, which usually opens in July, was open early in June.

##### TRAVEL

Travel to the park during 1926 showed a material increase over that of last year. The opening of the roads early in the spring, and the splendid publicity that the park has obtained, have resulted in a very gratifying increase during the year. The construction of the new all-year road up the Merced River, which was opened August 1, practically doubled travel for the

month of August, and this is an indication of the great crowds that may be expected next year, as this road will make the park accessible every day in the year. The Yosemite Valley Railroad Co. operated two trains per day during the summer season, but there has been a decrease in train travel compared with last year.

The following table gives an analysis of the travel and also a comparison of the figures recorded for the previous year:

*Travel comparison 1925 and 1926 season*

Entrance	Roads	Number of automobiles	Number of people	Number of motor cycles	Number of people
<i>Season 1925</i>					
Alder Creek.....	Wawona.....	16,038	50,801	32	42
Mariposa Big Trees.....	do.....	14,132	45,927	11	19
Crane Flat.....	Big Oak Flat.....	11,274	35,734	35	46
Merced Grove Trees.....	Coulterville.....	21	57	-----	-----
Aspen Valley.....	Tioga.....	3,628	10,759	1	1
Tioga Pass.....	do.....	3,961	12,000	4	5
El Portal.....	El Portal.....	175	465	1	2
Total.....		49,229	155,745	84	115
<i>Season 1926</i>					
Alder Creek.....	Wawona.....	17,251	53,771	22	29
Mariposa Big Trees.....	do.....	15,908	51,288	7	9
Crane Flat.....	Big Oak Flat.....	13,279	41,661	21	28
Merced Grove Trees.....	Coulterville.....	3	6	-----	-----
Aspen Valley.....	Tioga.....	5,112	15,157	-----	-----
Tioga Pass.....	do.....	6,664	19,750	10	10
El Portal.....	El Portal.....	14,389	45,273	25	30
Hetch Hetchy.....	Hetch Hetchy.....	2,279	7,555	-----	-----
Total.....		74,885	234,461	85	106

Other means transportation

	1925	1926
Travel by auto stage other than El Portal.....	20,475	17,130
Travel by Yosemite Valley R. R. and El Portal stage.....	25,614	19,281
Travel by Hetch Hetchy R. R. and Yosemite National Park Co. stage.....	5,950	1,265
Travel by wagon, horseback, horse vehicles, and on foot.....	1,269	1,966
Total travel other than private autos and motor cycle.....	53,308	39,642

SUMMARY

	1925	1926
Travel by private automobiles.....	155,743	243,461
Travel by motor cycles.....	115	106
Travel by auto stages other than El Portal.....	20,475	17,130
Travel by wagon, horseback, horse vehicle, and on foot.....	1,269	1,966
Travel by Yosemite Valley R. R. and El Portal stages.....	25,614	19,281
Travel by Hetch Hetchy R. R. and Yosemite National Park Co. stages.....	5,950	1,265
Grand total travel into Yosemite National Park.....	209,166	274,209
<i>Segregation as to areas</i>		
Visiting Yosemite Valley.....	117,920	165,550
Visiting Mariposa Grove.....	61,418	63,027
Visiting Tioga Road Country.....	23,878	35,840
Visiting Hetch Hetchy.....	5,950	9,792
Total.....	209,166	274,209
<i>Campers registered</i>		
Campers registered during season 1925 and 1926.....	47,547	67,281

NOTE.—There are 10 free public camping grounds in Yosemite Valley, 4 (Camps 19, 10, 14, and 11) being located east of Sentinel Bridge on the south side of the river, and 6 (Camps 7, 6, 15, 8, 9, and 12) being located east of Sentinel Bridge on the north side of the river. All of these camps are in the eastern end of the valley.



## GENERAL MAINTENANCE AND OPERATION

Maintenance of roads, trails, tools, and small equipment; care of public grounds; sanitation of public camping grounds; production of wood, hay, and shakes; care of stock, stables, and corrals; distribution of stock and employment of labor; operation of messes; hauling of freight, etc., were carried on under the direction of the park supervisor.

While the park roads were subject to heavier travel this year than ever before, the maintenance work carried on, together with improvements made from time to time, has resulted in keeping the roads in far better shape than has previously been the case.

## ENGINEERING AND CONSTRUCTION DEPARTMENT

Under the supervision of the resident engineer, two comfort stations were constructed this spring at Chinquapin. A new ranger station, containing a comfort station for men and women, living quarters for the rangers, checking station for handling traffic, etc., was constructed on the El Portal Road near Arch Rock. The maintenance of buildings and structures, and the maintenance and operation of water, sewer, and sanitation systems were also carried on under the direction of the resident engineer. In addition to this, part of the road survey, and general plans and maps in connection with park development were carried on under his direction.

## PROTECTION DEPARTMENT

The ranger service, under the supervision of the chief ranger, carried on the usual activities of traffic control, protection of fish and game, distribution of information to the public, suppression of fires, etc. A new plan of employing park rangers was worked out so as to secure the greatest number during the period of the heaviest travel, which has been quite satisfactory, although the ranger department has been undermanned, and at least 10 more permanent rangers should be authorized at the earliest practicable date.

The opening of the new El Portal Road has added a new ranger station. As this road carries an unusually heavy travel, it has been extremely difficult to properly handle the work of this department. Three temporary rangers for a period of 30 days were authorized for this additional work during the month of August.

## ELECTRIC TELEPHONE AND TELEGRAPH SERVICE

*Power.*—No special extensions were made to the electrical system during the year. During October, 1925, it was necessary to draw from the San Joaquin Light & Power Corporation to supply power required on our lines which we were unable to furnish because of low water; and the system was available for stand-by service throughout the year.

Because of low water again this summer and the extra heavy demands made, it was necessary to start drawing from the San Joaquin Light & Power Corporation in August. During the winter months, however, when the park had surplus power, this was turned over to the San Joaquin Light & Power Corporation. Our connections, therefore, have been mutually advantageous.

The following is a report of the power distributed for the fiscal year 1925-26:

	1925	1926	Increase
	<i>Kilowatt hours</i>	<i>Kilowatt hours</i>	<i>Per cent</i>
Sold to park operators.....	1,907,931	2,467,830	29
Sold to others.....	3,841,800	4,690,363	22
Furnished other Government agencies.....		83,041	-----
Used by National Park Service, lost in transit, etc.....	1,820,979	2,376,261	30
Total power generated.....	7,570,710	9,617,495	27
Total power purchased.....		96,600	-----
Total power handled.....	7,570,710	9,714,095	28

*Telephone service.*—The only material change in the telephone system was the installation underground of 2,500 feet of 50-pair telephone cable, which replaced an unsightly pole line.

Due to the blasting operations during the reconstruction of the El Portal Road during the winter, the long-distance telephone and telegraph wires were often put out of commission and a satisfactory service was difficult to maintain. The grading work was completed, however, before the opening of the regular tourist season.

*Telegraph service.*—No material changes were made this year in the telegraph system; and the telegraph equipment used was the same as that used last year.

#### *Telephone and telegraph report*

	1925	1926	Increase or decrease
			<i>Per cent</i>
Local telephone calls.....	271, 447	296, 555	+9
Long-distance calls.....	7, 702	9, 814	+27
Telegrams through telephone exchange.....	544	450	-17
Telegrams by Morse key.....	16, 080	16, 563	+3
Total messages, all classes.....	295, 783	323, 382	+9

#### MECHANICAL SERVICE

The machine shop in the park was operated continuously throughout the year under the supervision of the master mechanic, where repair and overhauling work on motor equipment was done. All motor-propelled equipment was kept in continuous operation throughout the year, except during short periods of overhauling and in cases where repairs were made necessary by breakdowns.

#### TIMBER OPERATIONS

The park forester supervised the timber operations of the Yosemite Lumber Co. and also the cutting of wood and timber for fuel and other purposes in the park, as well as the making of shakes.

During the year the Yosemite Lumber Co. employed an average of 446 men at their logging camps during the working season. They cut and shipped to their mill 89,973,031 feet board measure of logs taken from 1,935 acres of land, of which 390 acres were company-owned land in the park, and 1,351 acres of which were company-owned land in the Stanislaus National Forest. Timber on 194 acres additional was cut from the Government land in the Stanislaus National Forest under a sale contract.

During the year there were 735 cords of stove wood cut for the Government and 117 cords of 4-foot wood. The Yosemite Park & Curry Co. cut 1,116 cords of stove wood and 18 cords of 4-foot wood; and in addition for their employees and other concessionaires 96 cords of stove wood were cut. Near Gentry Checking Station 39,400 shakes were cut, 12,000 being for the construction of Boysen's studio and 27,400 for the Government.

#### EDUCATIONAL WORK

The new museum building was opened to the public on May 29, 1926, and since the opening date thousands of visitors have enjoyed its many exhibits. The museum attendance for the year amounted to 143,461, of which more than half were in the month of June alone; and there were more than 50,000 visitors to the museum during July. The branch museum at Glacier Point was operated during the summer months, with a total of 11,890 visitors. Nature-guide trips were taken by 9,151 visitors, and lectures and camp-fire talks were given to approximately 57,000 people during the year. The total number served in the various ways amounted to approximately 147,600 visitors.

The Yosemite Field School of Natural History was continued during 1926 with an enrollment of 20 for the seven weeks' course of study. With but one or two exceptions, these were experienced teachers, and in every case college

trained. It may be confidently expected that each and every one of them will carry the true spirit of the national parks to their several communities.

### FISH AND GAME

The streams in the park have suffered again this year from drought conditions, and this situation, together with the increased fishing, depleted the streams to the point where it was deemed advisable to limit the number of fish to 10 in one day. Upon the signing of the contract with the California Fish and Game Commission for the installation of a new hatchery, which is to be in operation by the season of 1927, the fishing limit was raised to the former limit of 25 fish, which agrees with the State regulations.

The deer in the Merced water shed have had a good season and are very plentiful. The estimate as to the number within the park is the same as last year, namely, 50,000.

The usual number of bears have been found on the floor of Yosemite Valley, where they have become quite a nuisance in raiding the camps of the park visitors and knocking over garbage cans to get at the food. They have been tame enough so that many of them have been fed from the hand, but there were a number of instances this summer where visitors were injured by being scratched or struck.

### COORDINATING COMMISSION

During the latter part of July, the President's Coordinating Commission on National Parks and Forests visited Yosemite National Park and made an inspection of the southeastern areas which have been proposed to be added to the park. A recommendation has been submitted to include an additional 30,000 acres. The question of throwing out some of the land in the western boundary, which is principally in private ownership and lacks scenic value, has been deferred for further study this fall.

### COOPERATIVE FEDERAL AND STATE ACTIVITIES

During June Commissioner H. H. Hoss resigned from the Department of Justice and Commissioner William D. Fullerton was appointed in his place. During the year 89 cases were tried by the commissioner, resulting in 61 convictions and 28 acquittals. A total of \$910 fines and jail sentences aggregating 150 days were imposed upon defendants found guilty during the year. Thirty days suspended sentences were granted. Three boys were sent to the Indian Industrial School for an equivalent of five years each as punishment for thievery. The Post Office Department, conducting post-office activities in the park, continued to give the same satisfactory service as in the past. The Bureau of Public Roads, under the Department of Agriculture, has been placed in charge of the road construction and has been giving splendid cooperation. The Bureau of Entomology assisted in the investigations of insect control work. The Public Health Service continued to cooperate in the assignment of a sanitary engineer to supervise sanitary matters in the park. The Forest Service has cooperated in fire-control work. The Bureau of Animal Industry and the Biological Survey cooperated in stamping out the hoof-and-mouth disease among the deer. The water-resources branch of the Geological Survey cooperated in stream-gauging work.

In addition to these Federal bureaus splendid cooperation has been received from the State of California and its various departments. The fish and game commission has furnished approximately 400,000 trout fry for stocking the streams in the park, and a contract has recently been entered into by which the State is to build a fish hatchery in Yosemite Valley, near Happy Isles, with an aquarium and rearing ponds. There has also been close cooperation with the county officials of Mariposa County in its various activities.

The California State Federation of Churches completed the organization of the trustees of the Yosemite Park Church during the year to conduct religious services in Yosemite Valley and to raise funds for a new chapel. The contract has been approved, and the site for the new church selected. The plans are now being drawn for the building.



## PUBLIC UTILITIES—FRANCHISES AND PERMITS

The consolidation of the Yosemite National Park Co. and the Curry Camping Co. was completed during the year, and the new organization has had a most successful season. During the spring the Yosemite Park & Curry Co. bought out the Madera Big Trees Auto Stage Co., popularly known as the Horseshoe Route, and operated that line during the summer. On the completion of the new all-year road up the Merced River the Yosemite Park & Curry Co. and the Yosemite Valley Railroad Co. made application to the State railroad commission for a franchise to operate a passenger automobile service. Hearings on this application were held early in August, but a decision on the applications has not yet been made.

The following franchises and permits were in effect during the season of 1926:

Name	For what granted	Expiration	Annual rent
Mrs. John Degnan.....	Delicatessen store.....	Dec. 31, 1926	<sup>1</sup> \$250
H. C. Best.....	Curios, photographs, etc.....	Dec. 31, 1934	<sup>1</sup> 250
A. C. Pillsbury.....	Photographs, etc.....	Dec. 31, 1939	( <sup>2</sup> )
J. T. Boyesen.....	do.....	Dec. 31, 1934	<sup>1</sup> 250
D. J. Foley.....	do.....	Dec. 31, 1930	<sup>1</sup> 250
Dr. Claude H. Church.....	Hospital, medical, and dental service..	Oct. 15, 1928	None.
Trustees of Yosemite school district.....	Lease of site for schoolhouse.....	Dec. 31, 1936	None.
Yosemite Park & Curry Co.....	Hotels, chalets, inns, camps, transportation service, stores, and dairy.	Dec. 31, 1944	<sup>3</sup> 5,000

<sup>1</sup> 4 per cent of gross revenue, \$250 minimum.

<sup>2</sup> 1 per cent to 4 per cent of gross revenues, depending upon amount.

<sup>3</sup> 22½ per cent of operating profits after deduction of 6 per cent on physical investment. \$5,000 for first 10 years.

*Lease, special use, and water power permits under acts of February 7, 1905, segregating lands from Yosemite National Park and placing same in Sierra and Stanislaus National Forests*

Period	Name and privilege granted	Compensation exacted
Indeterminate ..	Yosemite Valley R. R. Co. Lease dated Sept. 5, 1905, to construct and operate electric railway along Merced River to park boundary.	<sup>1</sup> \$1,000
Do.....	U. S. Forest Service to Yosemite Valley R. R. Co. for water to fill engines..	5
Perpetual.....	City and county of San Francisco, congressional grant, Dec. 13, 1913, rights of way for Hetch Hetchy water supply.	Variable

<sup>1</sup> Per annum, on demand of Secretary of the Interior.

## HOSPITAL AND MEDICAL SERVICE

The hospital and medical service, including dental service, continued to be operated under the direction of Dr. Claude H. Church. During the year the total number of cases handled was 2,110, in connection with which there were 3,913 office calls and 734 house calls made. There were 211 accidents reported, with 2 major operations and 19 minor operations. There were 6 births and 7 deaths.

The old hospital building is inadequate for the proper care of patients, as there is no provision made for contagious diseases, and during the year there were serious cases of smallpox, measles, and diphtheria in the park. These patients had to be put in an isolation camp in the public camping grounds. The operating room also is inadequate, and poor lighting makes necessary the sending out of many operative cases that should be cared for in the park.

## NEW YOSEMITE HOTEL

The construction of the new Yosemite Hotel is now in progress, the contract being signed May 20, 1926, between the J. L. McLaughlin Co., general contractors, 251 Kearney Street, San Francisco, Calif., and the Yosemite Park

& Curry Co., Yosemite National Park, Calif. The architects and engineers for the new hotel are Gilbert Stanley Underwood & Co., 730 South Los Angeles Street, Los Angeles, Calif., and 703 Market Street, San Francisco, Calif. The cost of the building, complete with furnishings, will be approximately \$800,000.

The entire building will be fireproof, with the exception of the dining room, which is to be log construction. The building is to be six stories high, with a mezzanine floor between the first and second floors; to have 92 bedrooms, 14 by 16 feet, with bath, 7 feet by 5 feet 6 inches, and closet, 7 feet by 4 feet 2 inches; with lounge, dining room, and kitchen accommodations for 1,000 guests.

The general construction of the building is to be steel frame, steel floor joist, and concrete floors; steel frame roof, with concrete slab and wood shakes; exterior walls to be native granite and concrete, concrete to be formed in rough form lumber and stained to imitate wood; interior partitions to be tile; interiors of lounge, lobby, administration wing, and solarium to be stone and plaster; interior beams and columns to be fireproof, with concrete to imitate wood.

The general arrangement of the building is as follows:

The loading platform will be approximately 150 feet northeast of the administration wing, connected to the administration wing by a 16-foot covered platform.

The administration wing, 122 feet 4 inches by 51 feet, contains an entrance lobby 51 by 33 feet, transportation office, exhibit room, general office, sweet shop, men's public toilet, and barber shop.

Connecting on the north of the administration wing is a store wing, 55 by 31 feet, with men and women employees' locker and shower rooms above on the second floor.

The main corridor from the administration wing leads into the main lobby, 51 by 30 feet. Directly off of main lobby are two elevators. From the main lobby there is one corridor leading into the dining room.

Main dining room is 51 by 120 feet, approximately 400 seating capacity; kitchen, connecting directly on north of main dining room, complete with refrigeration and store rooms, is 93 by 112 feet.

Main lounge, connecting on south of main lobby, is 82 feet 6 inches by 51 feet. Connecting on south of main lounge is another lounge 51 by 30 feet, two writing rooms 32 by 28 feet, and a solarium 26 by 51 feet.

On the mezzanine floor, directly over the main lobby, is a women's lounge 51 by 30 feet. Connecting directly off of the women's lounge is a beauty parlor and women's public toilets. Connected with the women's lounge by a corridor is a private dining room of approximately 25 seating capacity. Connecting on the south of the women's lounge are two writing rooms and a parlor.

The second, third, fourth, and fifth floors are to be bedroom floors. The sixth floor contains a roof garden 51 by 30 feet, with a small open balcony connecting on the south.

#### OTHER IMPORTANT EVENTS AND ACTIVITIES IN 1926

The V. R. Dennis Construction Co. carried on El Portal Road grade rectification during the winter months, and about June 1 started paving with hydraulic cement on about 5 miles of this road. The work covered by the Dennis contract will be finished about October 15, 1926; and plans are under way for letting a new contract to complete the paving on the floor of the valley.

The California Highway Commission completed the new all-year road to El Portal, and it was thrown open to travel and dedicated on July 31, 1926. As the Dennis Construction Co. had not completed paving operations, it was necessary to operate this road under controls, which were maintained on a 24-hour schedule.

In connection with this dedication, a pageant in honor of the seventy-fifth anniversary of the discovery of Yosemite Valley was staged by Mr. Garnet Holme in the Royal Arch Meadows on August 1 and was a grand success. As a result of the opening of the new road, travel has increased more than 50 per cent.

At the time of the opening of the new road and the diamond anniversary celebration, the site of the new fish hatchery to be constructed by the California Fish and Game Commission near Happy Isles was appropriately

dedicated, as was also the site of the new Yosemite National Park Church. Plans for both of these buildings are now being prepared.

On July 24 the Crown Prince and Crown Princess of Sweden and their party visited the park, coming in from Merced, stopping at the Mariposa Grove of Big Trees and spending the first night at Glacier Point; proceeding from there over the Pohono Trail, spending the second night on the floor of Yosemite Valley, departing by train from El Portal the morning of July 27.

The Bureau of Public Roads has given general supervision to the paving operations of the Dennis Construction Co., and also has made preliminary surveys of the Big Oak Flat and Wawona Roads, and is now making a definite location of the survey of the Big Oak Flat Road so that the timber to be preserved on this road might be secured. Considerable study has also been given to the relocation of the roads on the floor of Yosemite Valley.

On August 13 a fire destroyed the roof of the eastern half of the dining room at Yosemite Lodge.

The park has had about the usual number of forest fires during June, July, and August; but, with the exception of one near Glacier Point where considerable fine timber was destroyed, they were not very serious, and no great amount of damage was done.

The stone pillars marking the El Portal gateway were torn down during August, as was also the old power house building at Happy Isles, and the sites cleared up.

Superintendent W. B. Lewis collapsed in his office from strain and overwork on June 15 and has been forced to take an extended vacation to recuperate.

### SEQUOIA NATIONAL PARK, CALIF.

JOHN R. WHITE, Superintendent, Alder Creek, via Three Rivers, Calif.

The past year has undoubtedly been the most momentous in the 36 years since the park's creation in 1890. The enlargement bill on July 3 added 352 square miles to the 252 already in the park, making a total of 604 square miles of sequoia forests, flowery meadows, streams, lakes, and valleys. The Generals Highway was opened early in the spring and travel leaped upward like the thermometer of a fevered man. Despite 34 fires, caused principally by lightning, which burned over 13,500 acres, the year has been in every way successful except that the big travel increase without appropriations for camp extensions resulted in unusual dust and discomfort for visitors. Nevertheless, we have received no complaints against park personnel but many compliments and congratulations on accomplishments with small funds. Complaints have been almost entirely of lack of accommodations in public auto camps and of dust in camps and on roads.

#### THE ADDED AREA

Steps were immediately taken to control the 352 square miles of territory transferred from the Sequoia and Inyo National Forests on July 3. Supervisors Cunningham and Boothe assisted in every way and continued work in the Kern region until the last moment, a long-needed trail bridge over the Big Arroyo being the final monument to the Forest Service administration of the area. On August 3 Rangers Fry and Walter took station in the Kern Canyon and telephone connection with park headquarters was established through courtesy of the Forest Service.

The needs of the added area will be comparatively few for the next two or three years: Three additional rangers from April to November or longer and funds for trail construction and improvement, telephone line construction, public camp and horse pasture development, and miscellaneous service to the public.

There is a unanimity of opinion that the Kern Canyon and high sierra area should be developed only as a trail park and that the honk of the motor horn should never echo in the, at present, almost virgin valleys of the enlarged park. Projected county and State road development is far south of the park boundary, and a possible spur road from the transsierra highway to Mount Whitney would not violate the highly scenic area.

#### PROTECTION—PARK RANGER FORCE

Owing to pressing need for funds to develop camp grounds the park ranger force of 13 men handled a 352 square mile enlargement and over 100 per cent



travel increase with fewer rangers on duty than in 1925. Only radical reorganization of checking and camp registering systems made this possible, and, of course, outlying stations and patrols were neglected. Nevertheless, the park was protected, 34 fires put out, and service given the public.

No complaints but many compliments were received about service by rangers and all employees.

A total of 680 cattle were grazed by seven permittees, as against 730 head in 1925.

There was one complaint filed before United States Commissioner Fry, conviction in one case, and \$10 fine imposed.

### TRAVEL

It may be expected that the growth of the 1926 season will continue at an increased ratio. Heretofore there has been practically no advertising and a poor road. Now with a reorganized operating company and good road we shall experience the cumulative effect of advertising and recommendation by satisfied visitors.

The fact that we handled 23,465 autos and 77,569 visitors over the new road without a single accident speaks volumes for the construction and for park forces, particularly as the road is unprotected by curbs or fences on steep sidehills and is far from its completed stage.

Travel may be roughly divided as follows:	Per cent
Public automobile campers-----	91½
Hotel and housekeeping campers-----	8½

Of the 89,404 visitors only 376 came by stage, or four-tenths of 1 per cent. A marked increase in this proportion may be expected when the new hotel management gets its stride.

By origin of cars travel through the headquarters checking station, Alder Creek, showed following:

	Per cent
San Joaquin Valley-----	64.0
Northern California-----	3.6
Southern California-----	27.8
Other States and foreign-----	4.6
	<hr/> 100.0

Many visitors from other States come in cars of California registration or as guests of Californians so that the percentage of California cars is scarcely a fair distribution of visitors.

### PUBLIC AUTO CAMPS

Somehow or another we accommodated in public camps during July 4 week-end no fewer than 6,000 persons. The tremendous travel increase was foreseen and every possible penny diverted to preparing camps, the \$1,500 camp extension made, and 1927 funds which became available in June immediately expended in clearing new sites in Hazlewood, Firwood, and other camps, in laying pipe, and placing toilets. Yet, during the peak weeks visitors were doubled and trebled in prepared camps and spread over a large area of unprepared camp grounds, greatly to the detriment of vegetation.

Reference to my report for 1925 will show that I reported the Giant Forest camp grounds as holding 2,000 visitors. They carried a peak load of over 6,000 while a camp census at any time between June 20 and August 20 ran over 3,000. It is divinely to be hoped that 1928 funds will become available in time for us to lay 3-inch main water line to new camp areas and to make other extensions the essentiality of which may be judged by present conditions in Giant Forest camps.

At the end of 1926 season we have in the Giant Forest area 365 prepared or partly prepared camps estimated to carry 2,900 visitors; but many of these camps have been prepared by visitors, and there is not water and sanitation for all.

Hotel and housekeeping extensions with the policy of gradually restricting camps in the Sequoia forested area have also complicated our public camps problem, and we need additional funds to move camps, comfort stations, etc., to suitable new sites.

## NATURAL FEATURES AND WILD LIFE

*The big trees.*—Progress was made in protection of the Sherman and other trees against intensive travel; several thousand young Sequoias with many other species were raised in a nursery; a clean-up of debris and reforestry of denuded area at Giant Forest was continued.

*Fish.*—Streams near roads are overfished and need heavier stocking which it is hoped will be possible with construction of State fish hatchery at park border. Good sport may be had within a few hours of Giant Forest by trail and fishing has held up remarkably well in the main Kaweah above Hospital Rock.

*Wild life.*—Twenty-two bears with three sets of cubs were counted at the incinerator. A mountain lion with cubs was seen on Silliman Creek. Deer seem more abundant than ever, have many fawns in public camps, and even permit visitors to pet and scratch them.

## MUSEUM AND NATURE GUIDE SERVICE

Our little museum, begun in a tent in 1923, has now overflowed to occupy nearly the whole of the administration building at Giant Forest. There is no room for further expansion and cases are badly needed for protection of exhibits. A fine collection of butterflies was totally destroyed by black ants for lack of proper show case. The exquisite collection of Indian baskets and handwork given by Jesse Agnew is improperly protected, while the collections are in a frame and shake building with high fire hazard. A suitable museum with show cases is a crying need.

The nature guide walks by Messrs. Kobs, Sisson, and Ellsworth were most successful and are the best form of entertainment for the public. They were conducted, as was the museum, practically without appropriations, but the point has been reached at which our efforts should be recognized. A total of 1,213 attended the walks, while 18,000 listened to camp-fire lectures on scientific subjects and park policies.

The expansion of museum, nature walks, and camp-fire lectures is the surest protection against degeneracy into jazzy amusements. If we do not lead the public into amusements and sports which harmonize with the purposes of the park, we must not be surprised if the public and the operators clamor for an atmosphere which may be eventually destructive of the policy of maintaining the parks in absolutely unimpaired form for the use of future generations as well as those of our own time.

## MISCELLANEOUS SERVICE TO THE PUBLIC

The Tulare County Library, under the care of Miss Gretchen Flower, distributed 2,200 books to visitors through its Giant Forest branch. The nature books were in great demand.

Religious services and camp-fire entertainments were held regularly. The new operating company has fully assisted in this and other public service. Regular dances were well attended.

## PUBLIC OPERATORS AND UTILITIES

A 20-year contract covering all forms of hotel, housekeeping, transportation, general store, service station, and other service to the public was entered into during the past year. Every consideration was shown the operators who under temporary annual permit had furnished service before the organization of a well-financed company.

The Sequoia & General Grant National Parks Co. made many improvements, enlarging the lodge and camp fire, installing a handsome entrance gate, and in other ways preparing for the great increase of visitors experienced in 1926 and the further increase certain in 1927.

The few complaints from visitors on store and other service were quickly adjusted on representations from this office and are believed to be incidental to new management and the many changes necessary in personnel and organization.

Arrangement for transfer of the Sequoia National Park Stage Co.'s business outside the park was not made and decision on application of new company

for route from valley points to park boundary has not been rendered by State railway commission, so that at present an undesirable condition exists with transfer of passengers at park boundary, or, rather, at Alder Creek Station, 1 mile inside boundary.

A total of 798 stage passengers was carried, as against 990 in 1925.

#### CONSTRUCTION AND MAINTENANCE

*Park headquarters (Alder Creek).*—Barn and corral, with vermin-proof feed room, comfort station, water filling station, and fire hydrants, were installed. The comfort station was destroyed by brush fire and other buildings would have burned but for 2-inch fire hydrants. Many improvements were made along the lower section of Generals' Highway, including pipe line and temporary toilets at Potwisha and Hospital Rock Camps, drinking fountains, and filling stations. Between Hospital Rock and Giant Forest radiator filling stations were placed at every available spring.

*Giant Forest.*—Such extensions of pipe lines, toilets, and camp grounds as were possible with small appropriation were made. Spray system for septic tank effluent as designed by Sanitary Engineer Hommon was installed. Garbage incinerator platform capacity was doubled. Many pit toilets of fly-proof model placed and old insanitary toilets removed. Over 50 new camps opened. Many fireplaces and tables installed. Trail to Highland built and graveled. Much miscellaneous construction and clearing up incidental to change of village site. Main water supply adequate but funds lacking for extensions of 3-inch laterals and distributing system, so that many camps were waterless during peak travel.

*Sewer and water systems.*—These systems built in 1923-24 under plans of Sanitary Engineer Hommon have worked well, but funds are lacking for necessary extensions. The water system has carried a peak load of 8,000 people whereas it was figured for 6,000, the only trouble being in distribution.

The garbage incinerator built in 1924 is working well and is visited by many bears.

*Road construction.*—Under the able direction of W. M. Austin, Bureau of Roads Engineer, work on the Generals' Highway, which went slowly from 1921-1925, was so rushed that despite low funds the road was opened for travel early in the spring and was completed to Giant Forest in July. Costs were extremely low and this has been due as well to efficient organization as to fine spirit of cooperation between road and park forces.

Work is now under way in the heart of Giant Forest, where the new village site is being developed and continuation of road to General Sherman Tree and Lodge Pole Camp undertaken. From this year's appropriation it is hoped to continue the new road approximately a mile from the new village site to the corral, and on a new route with easy grades and good alignment through the heart of Giant Forest. Many conferences and inspections of route on the ground were held in order to obtain best route with least damage to landscape and trees.

A road to Moro Rock and Crescent Meadow on completely new survey is an urgent need, as the present tortuous track is jammed by auto traffic. When these motor roads to Moro and Sherman are built the present roads may be converted into badly needed bridle paths.

#### RECOMMENDATIONS AND CONCLUSIONS

The only important recommendation is that appropriations be secured before rather than after needs arise. Although the increase in fiscal year 1926-27 has permitted some needed improvements and better general maintenance, the items under repairs and alterations still fall far short of our needs while we have insufficient funds to extend the camp grounds and prepare for the increased travel which the new road is bringing us. A policy of road building which will bring in the crowds should be accompanied by a definite policy of developing camp grounds and utilities. If this is not done, further damage to the natural beauties of the park will result.

The past summer has seen the worst forest fires in the history of the park and this part of California. Besides the score and more of lightning fires originating in the park the great fire of latter half of August burned 120 square miles outside the park, entered the new west boundary line over the north fork of the Kaweah River, and at date of writing this report had burned



10 square miles of brush and an undetermined area of pine, fir, and black oak timber in the park.

Here again a progressive policy of forest protection and reforestation would in the long run prove an actual cash economy while the saving in watershed, lumber, and scenic values would be incalculable.

There is no better protection for the forests than roads, trails, and developed camp grounds. The whole park area below 7,500 feet should be thus protected. The danger of serious forest fire in the cleaned-up Giant Forest area is negligible. The danger in a virgin area which has been untouched by fire for 30 years is evidenced by the tremendous fire now raging less than 5 miles from these headquarters. The fire, now raging on a 25-mile front, could not have crossed a 20-foot road on each side of which the forest had been cleaned up for a distance of 200 or 300 feet.

The most serious problem confronting a superintendent is the preservation of the natural beauties of his park in the face of the crowds which good roads and automobiles are bringing to the parks. Modern conditions have created a new problem of handling large crowds in our natural recreational areas while preserving the natural beauties. This problem has created a new profession, that of park or recreational superintendent, and it is a profession which calls for constant study to keep up with changing conditions. There are few precedents for the problems which arise, and, like any other specialized profession, the study of the work and problems is an absorbing task.

In conclusion it is pleasurable to reflect on progress made during the past year. The forward steps have been possible largely because of the loyalty and good work of all park employees. We are proud that the park has a good reputation for courtesy and service to the public, and we intend to strive to maintain that reputation by our work through the coming year.

### Statistical summary

#### TRAVEL

	1926		1925	
	Autos	Visitors	Autos	Visitors
By private automobiles.....	26,391	87,396	14,009	45,088
By stage.....	112	376	264	929
By other means of conveyance.....		1,632		660
Total.....	26,503	89,404	14,273	46,677
Travel by entrances:				
Generals' Highway, Alder Creek Station.....	23,465	78,569	5,101	16,345
Mineral King Road, East Fork Station.....	2,697	8,063	2,571	7,988
South Fork Trail, Clough Cave Station.....		389		272
Trails, all sources.....		1,243		137
Giant Forest Road, Cedar Creek Station.....	341	1,140	6,601	21,935
Total.....	26,503	89,404	14,273	46,677
Visitors to Giant Forest during winter season.....		3,594		1,220

	1926	1925
Revenues:		
Net, all sources, fiscal year.....	\$27,072.03	\$19,283.74
Automobile fees, travel season.....	\$12,651.00	\$10,965.35
Appropriations:		
General.....	\$62,572.00	\$56,000.00
New construction.....	\$10,051.00	\$40,000.00
Roads and trails.....	\$185,500.00	\$229,000.00
Middle Fork Road.....		\$40,000.00
Cases before United States commissioner:		
Total number cases.....	1	8
Convictions.....	1	7
Total fines imposed.....	\$10.00	\$130.00
Grazing:		
Number of cattle.....	680	730
Number of permittees.....	7	7
Area occupied (acres).....	46,140	45,140
Fish planted.....	70,000	140,000

*Statistical summary—Continued*

## PUBLIC OPERATORS

	1926		1925 <sup>1</sup>	
	House-keeping	Lodge	House-keeping	Lodge
Sequoia-General Grant National Parks Co.—Accommodations for guests:				
May.....	305	294	-----	-----
June.....	1,829	1,600	-----	-----
July.....	2,898	2,419	-----	-----
August.....	2,400	1,749	1,063	1,613
September.....	595	808	160	391
Total.....	8,027	6,870	1,223	2,004

	1926	1925 <sup>2</sup>
Sequoia-General Grant National Parks Co. (transportation service):		
Passengers carried.....	798.	990.
Freight carried.....	150 tons, estimated.	110 tons, 52 pounds.

<sup>1</sup> Kings River Parks Co. operated in park, 1925.<sup>2</sup> Sequoia Stage & Transportation Co. operated in park, 1925.

## GENERAL GRANT NATIONAL PARK

JOHN R. WHITE, Acting Superintendent, Alder Creek, via Three Rivers, Calif.

While this small but useful park awaits its greatest development with the construction of the Generals' Highway, it showed a 22 per cent travel increase this year with 50,597 visitors as compared with 40,517 in 1925. The most important work was reconstruction by park and county road forces of the old road from the Big Tree Grove to Sequoia Lake. Frequent conferences between Bureau of Public Roads Engineer Austin and County Supervisor Collins resulted in an agreement on improvements which eventually will be on the route of the continuation of the Generals' Highway from the park to the valley. The county has done away with the 33 per cent grade from Sequoia Lake to Happy Gap so that an alternative exit road on fair grade and alignment is offered the motorist.

Two new double comfort stations were built in public camps; the service station was moved from congested meadow site to forks of road to Hume and Big Tree Grove; small extensions were made in water lines; a 3-kilowatt gas-electric plant was installed to light headquarters buildings; a Sequoia section bulletin and display board was placed at headquarters and miscellaneous service given the public.

A schedule of ranger service was worked out in order to permit proper patrol with information service at headquarters. No complaints were received against park personnel but many compliments.

The reorganized company made some improvement of service at lodge and housekeeping camps and contemplates further additions and changes. The meadow site will be abandoned and all hotel activities transferred to new site. This will preserve the meadow as the park center and a beauty spot.

When the interpark highway is built, General Grant Park will become an important station for through travel which will be more of a statewide and national character than at present. Meanwhile the park is progressing slowly but surely and is giving splendid service to the people of the valley and the Nation.

The public-spirited activities of the people of Sanger, headed by Mr. Charles Lee of that chamber of commerce, resulted in national publicity for the park as the home of "The Nation's Christmas Tree."

The cooperation received by Chief Ranger Decker and myself from Supervisor W. A. Collins of Fresno County, Mr. Andy Ferguson of Wilsonia and Orosi, together with other persons having a local interest in the park has made the administration a pleasure rather than a task.

*Statistical summary*

## TRAVEL

	1926		1925	
	Autos	Visitors	Autos	Visitors
By private automobile.....	12, 869	50, 597	-----	-----
By stage.....	None.	None.	-----	-----
By other means of conveyance.....	None.	None.	-----	-----
Total.....	12, 869	50, 597	11, 108	40, 517

	1926	1925
Revenues:		
Net, all sources, fiscal year.....	\$4, 024. 32	\$3, 104. 32
Automobile fees, travel season.....	\$3, 234. 50	\$3, 503. 79
Appropriations:		
General.....	\$12, 180. 00	\$12, 180. 00
New construction.....	None.	None.
Cases before United States commissioner:		
Total number of cases.....	None.	2
Convictions.....	None.	None.
Total fines imposed.....	None.	None.
Fish planted.....	None.	None.
Approximate number wild animals in park:		
Deer, in vicinity.....	500	500
Bear.....	None.	None.
Lion, periodically.....	2	2

## PUBLIC OPERATORS

	1926		1925 <sup>1</sup>	
	House-keeping	Lodge	House-keeping	Lodge
Sequoia-General Grant National Parks Co.—Guests during season:				
May.....	56	37	-----	-----
June.....	521	95	524	184
July.....	2, 241	240	3, 256	308
August.....	884	72	3, 010	290
September.....	105	27	-----	-----
Total.....	3, 807	471	6, 790	782

<sup>1</sup> Kings River Parks Co., operated in park 1925, Evans & Foster, lessees.

## MOUNT RAINIER NATIONAL PARK

OWEN A. TOMLINSON, Superintendent, Longmire, Wash.

Minor changes in boundaries between the Rainier National Forest and the park were made by the act of Congress (Public No. 303, 69th Cong.) approved May 28, 1926. These changes were effected along the Carbon, White, and Nisqually Rivers in order to facilitate administration of the reservations. One thousand one hundred and seventy acres were added to the parks and 540 acres were transferred to the national forests. No scenic features were involved in the changes.



## ADMINISTRATION

The permanent administrative force was increased by 1 clerk and 2 rangers during the year and now totals 15 employees. The organization consists of five departments, each under a supervisory head as follows: Administrative, protection, maintenance, construction, and educational. During the summer months the personnel was increased by 19 appointees and 90 temporary employees, skilled and unskilled laborers. The maximum number of employees of all classes on the pay roll during the past year at one time was 130.

Twenty-four cases for violation of park rules and regulations were taken before the United States commissioner for the park during the year, resulting in 24 convictions. Sentences were imposed in 2 cases carrying a total of \$320 in fines. Sentences in 2 cases carrying a total of \$25 in fines were suspended.

Appropriations for the operation of the park for the fiscal year 1926 totaled \$106,500, of which amount \$90,130 was for general administration, protection, and maintenance; and \$16,370 for physical improvements, including the extension of free public camp grounds at Paradise Valley, Longmire Springs, and Carbon River. Road budget funds totaling \$275,500 for reconstruction and construction of roads and bridges were allotted to this park under the three-year road program.

Revenues were collected during the fiscal year ending June 30, 1926, and turned into the General Treasury as follows:

Automobile and motor cycle permits-----	\$56,003.50
Miscellaneous collections-----	1,725.79
Total-----	57,729.29

This is an increase of \$9,920.11, or 20 per cent over the preceding fiscal year.

## WEATHER CONDITIONS

An exceptionally mild winter was followed by an exceptionally early spring and warm dry summer. A shortage of moisture began with winter snow. The fall was very much below the average and when spring came the run-off was rapid and scant. The rainfall was also very conservative during the intervening season. All of this was reflected in a tinder dryness in the forest and brush, making fire conditions extra hazardous at a time of year when the park is usually at its best. Mild weather during the winter was favorable for road work which was in progress, but absence of snow a greater part of the season was unfavorable for winter travel, and, again during the early summer, a shortage of moisture was responsible for the extreme fire hazards and smoky conditions which unfavorably affected travel. The hottest day of the year, 94°, occurred on June 24, the coldest, 20°, was on January 26.

## TRAVEL FOR 1926

For the first time since 1921, travel figures for the year failed to show an increase over the preceding year. This is attributed to the unusually dry summer and bad fire conditions, a falling off in rail travel to the Pacific coast and to road conditions inside and outside the park. A great deal of unwarranted publicity regarding conditions of the approach and park roads, due to paving and reconstruction work in progress and to the forest-fire scare which created the impression that the park was either closed or that travel was greatly restricted, was responsible for the decrease.

The largest travel day in the park this year was July 4, when 7,625 people and 1,780 cars registered at the four entrances. The largest travel week recorded was from July 1 to 8, when 17,067 people and 3,983 cars entered. July, 1926, was the heaviest travel month with 53,745 people and 12,496 cars.

Of the total of 149,034 visitors entering the park in private automobiles 56,334 or 44 per cent patronized the various public-camp grounds, of which number 42 per cent were transients, availing themselves of the use of these camps for cooking one or two meals only. The balance were overnight visitors remaining one day or longer.

*Summary*

Methods of transportation	Nisqually entrance		White River entrance		Carbon River entrance		Ohanapecosh	Total	
	Cars	People	Cars	People	Cars	People	People	Cars	People
Private autos.....	28, 863	110, 545	8, 552	34, 037	1, 167	4, 391	-----	38, 582	148, 973
Stages.....	1, 332	10, 588	-----	-----	-----	-----	-----	1, 332	10, 588
Motor cycles.....	41	57	3	4	-----	-----	-----	44	61
Miscellaneous.....	-----	12	-----	35	-----	121	2, 006	-----	2, 174
Total.....	30, 236	121, 202	8, 555	34, 076	1, 167	4, 512	2, 006	39, 958	161, 796

Travel from States east of the Mississippi River.....	9, 715
Travel from States west of the Mississippi River.....	150, 312
Travel from United States Territorial possessions.....	204
Travel from foreign countries.....	1, 565
Total travel for year.....	161, 796

## APPROACH HIGHWAYS TO PARK

Six and six-tenths miles of new paving were laid during the summer on the Mountain Highway connecting the Nisqually, or southwesterly, entrance with the Pacific Highway on the Puget Sound. Only 6 miles of the distance between Tacoma and the park—3 miles near the park boundary and 3 miles through the Nisqually Canyon near the town of La Grande—remain unpaved. Three miles of this will be paved next year.

Considerable improvement was made on the section of the Naches Pass Highway leading from the city of Yakima to the summit of the Cascades, east of the White River Park entrance. The final location survey was made on the 8-mile section from the park entrance to the summit, which is to be constructed next year. When completed, this highway will open a new trunk line across the State.

The State and national forest road approach to the Ohanapecosh, or southeasterly, entrance from the Pacific Highway has been reconstructed and surfaced with crushed rock to the town of Lewis, 13 miles from the park. From Lewis to Clear Fork, a distance of 7 miles, the national forest road which now is in good condition, will be reconstructed next year. The 6 miles from Clear Fork to the Hot Springs is passable for autos during the summer. The county and national forest road approach to the Carbon River, or northwesterly entrance was improved during the year and is now a fairly good summer road.

## NATURAL FEATURES AND WILD LIFE

Mount Rainier is a volcanic cone piled up of loose materials which are being cut and worn away by action of the glaciers. While there is a constant wearing and change taking place, there has been no striking development during the year.

Glaciers cover approximately 45 square miles of the mountain and constitute one of the most striking features of the park. During the last 30 years the glaciers—28 in all—have been receding from around 100 feet a year for the smaller, less active ones to less than 30 feet for the larger north-side glaciers. This season, for the first time, measurements were taken of the Emmons Glacier on the north side.

Forests of virgin timber cover a large area of the park and these contain dense stands of the various types common to the Northwest. Due to the exceptionally light snowfall last winter and the dry spring and summer months, the worst fire hazards in the history of the park existed this past season. The forests were in constant danger throughout the season, but while very disastrous fires were burning on all sides, the park timber escaped with only a few minor fires, which were placed under control before serious damage was done.

Flowers are second to the glaciers in interest and constitute one of the most important natural attractions. Over 400 flowers bloom from early spring until snowfall. This year, due to the exceptionally early spring and dry summer,

the height of the flower season, which normally does not come until July, came in June. While there was the usual splendid flower season, it was so early that a majority of park visitors missed it.

Wild life of the park is holding its own quite well and is increasing. Bear and deer are frequently seen by park visitors, while the smaller animals and many of the birds come into the hotels and camps. Fewer predatory animals were reported during the past year than for several seasons, indicating that the control work which has been carried on in cooperation with the Biological Survey is bearing results. The annual census of the wild life shows the following approximate numbers of the larger species:

Deer (Columbia black tail)-----	450
Goat (white mountain)-----	250
Bear (black)-----	225
Wolf (timber)-----	10
Coyote, bobcat lynx (difficult to distinguish from signs)-----	300
Cougar (mountain lion)-----	18
Eagle (both golden and bald)-----	50
Elk-----	20

#### PUBLIC CAMP GROUNDS

Free public camp grounds were maintained at Longmire Springs, Paradise Valley, White River district, and Carbon River district. The camp at Longmire Springs was extended and will now accommodate 400 cars. The Paradise Public Camp will now accommodate 800 cars. At both of these camps running water is piped to all sections of the grounds; modern toilet facilities, electric lights, stoves, tables, and free firewood are furnished. In addition hot and cold shower baths, a laundry, and a community building which serves as a common meeting place for entertainment of campers, the nature guide and information headquarters, illustrated lectures, camp-fire talks, and shelter in case of stormy weather, are provided at Paradise. White River Camp, in the northeast section of the park, has running water, pit toilets, tables, stoves, and firewood provided and will accommodate about 160 cars. A similar camp at Ipsut Creek on the Carbon River Road in the northwest section of the park will accommodate 125 cars. Unimproved camp sites along the Carbon and White River Roads will accommodate from 300 to 400 additional cars in each section. The unimproved camp sites formerly maintained at the Hansen Camp, Kautz, and Van Trump on the Nisqually Road, on the south side of the park, were not used this season due to their being occupied by road-construction camps. The additional camping accommodations provided at Longmire and Paradise took care of the number of cars formerly assigned to these roadside camps.

Further extensions of all public auto camps should be made until adequate facilities are available for the ever increasing number of campers.

#### PUBLIC UTILITIES

Hotels, pay camps, supply stores, curio shops, transportation, and other services operated by the Rainier National Park Co., public-utility operators, were conducted in a satisfactory manner throughout the year.

On June 9, 1926, the National Park Inn at Longmire Springs was completely destroyed by fire. This building contained 28 rooms, dining room, kitchen, lobby, office, cigar and news stands, etc. Work of remodeling the annex and the construction of eight 2-room cabins was started within three days after the fire, and by the end of June complete dining-room and lobby service equaling those lost in the old building were available. The eight 2-room cabins constructed provided 16 rooms. The prompt action of the officials of the Rainier National Park Co. in restoring full service is most commendable.

New transportation equipment added this year included 14 stages, four 7-passenger touring cars, and one 7-passenger sedan. The new stages have stationary tops with removable covers, which are very convenient for removing and more attractive than the old-type folding tops.

Additional room accommodations inside buildings, to replace bungalow tents which are operated as a part of Paradise Inn, is still one of the most urgent needs of the operator at Paradise Valley, and I renew my recommendation made last year that the next unit of the annex be constructed without further delay.



## EDUCATIONAL SERVICE

The educational service which was started in this park in 1922 was continued this season. Lectures, illustrated with colored lantern slides, were delivered each evening at the hotel lecture room and at the public auto camp at Paradise Valley. Similar lectures were delivered at the Longmire Springs Public Auto Camp three evenings each week. These lectures were supplemented by daily field trips at Paradise Valley and by three trips a week at Longmire Springs, on which the natural life and geology of the park were studied first hand. Educational work also included the issuing of a weekly bulletin on natural history subjects during the summer months. This bulletin was curtailed to monthly issues during the remainder of the year. Limited camp-fire lectures and nature study were undertaken at the White River Public Auto Camp this season for the first time. Information services, which include the distribution of free park folders, pamphlets, etc., and the sale of publications on this and other parks, the furnishing of information on camps, hiking trips, road information, hotels, etc., was maintained at Longmire Springs, Paradise Valley, and White River Public Camp in connection with the educational work. Three thousand people attended lectures which were given from one to four times each evening, approximately 67,000 people were served at the information offices, and 300 people received copies of each of the 30 issues of the Nature News Notes.

## PARK MAINTENANCE

General maintenance work done during the year covered 35 miles of automobile roads, 175 miles of trails, 150 miles of telephone lines, 4 large and 4 small public auto camps, 9 patrol and shelter cabins, 5 ranger stations, 6 cottages for employees, and a small administration building, which constitute the main improvements of the park.

Owing to an exceptionally mild winter the spring repair work on roads, trails, telephone lines, buildings, etc., was less than for a number of years. As a result maintenance funds for the various projects were sufficient for the first time in several years to overhaul and place all facilities in good condition for the travel season. Though far from satisfactory for present traffic, due to the character of construction, the park roads, except those sections under reconstruction, were maintained in better condition than in former years.

The funds available for trail maintenance were not sufficient to cover the park's 242 miles of trails. Only about 175 miles could be maintained in condition for horse travel. Several important trails could not be maintained in condition for horse travel as they require considerable expenditure due to the fact that no repairs have been made for several seasons and each succeeding year sees further damage.

Early melting of snow enabled district rangers to repair and place in operation the telephone lines connecting all stations with headquarters much earlier than usual. This work was completed in time to take care of the extra business in connection with the fire-patrol work which had to be undertaken two months earlier this year.

Buildings and shelter cabins were repaired and maintained in good condition.

## CONSTRUCTION AND IMPROVEMENTS

*Longmire Public Auto Camp.*—One-half mile of camp road was constructed, 75 additional camp sites cleared, and a water supply extended to 24 additional drinking faucets.

*Paradise Public Auto Camp.*—A community building containing an assembly room, 100 by 40 feet, and living quarters for four rangers, was constructed in the Paradise Public Auto Camp. This building is for the use of campers as a common meeting place and will serve for entertainment, illustrated lectures, and as information and nature guide service headquarters.

*White River Public Auto Camp.*—Additional accommodations, including space for about 50 camp sites, 4 pit toilets, and 6 drinking faucets, were provided in this camp.

*Trails.*—A trail 0.9 of a mile long connecting Ipsut Pass Trail and Lake Eunice was constructed by Troop 65, Seattle Boy Scouts of America, under the leadership of Mr. Clark E. Schurman, scout master. This trail makes accessible Lake Eunice and a fine scenic area which will be much visited by hikers who enjoy real wilderness country. This work of Troop 65 of the Seattle Boy Scouts is most commendable and is greatly appreciated by the public as well as the National Park Service.

*Buildings.*—An equipment shed 106 by 26 feet, which will house nine pieces of heavy road equipment, was constructed on the utility site at Longmire Springs.

A log checking and ranger station, 42 by 28 feet, containing an office and registration room, in addition to quarters for three bachelor rangers, was constructed at the Nisqually Entrance.

A four-room employee's cottage, 28 by 38 feet, was constructed at Longmire Springs.

#### THREE-YEAR ROAD-DEVELOPMENT PROGRAM

*Roads.*—Twelve miles of the Nisqually Road, from entrance to Glacier Bridge, was reconstructed to standard 24 feet width and surfaced with crushed rock. Contract was let and the work started on construction of 10 miles of the first section of the west-side highway. This work was started from the west end at the Nisqually Road junction.

*Bridges.*—Permanent bridges constructed on the Nisqually Road included rustic-log spans over Tahoma and Kautz Creeks; concrete arch over Nisqually River; concrete girder over Paradise River on the Narada Cut-off, and stone faced concrete arches over the Paradise River, fourth crossing, and over Edith Creek. These bridges are all of attractive design and harmonize with the landscape.

#### RECOMMENDATIONS

A program has been prepared covering the proposed developments of the park to take care of immediate and future needs. This program covers in detail roads, trails, camp grounds, buildings, and all other improvements considered necessary in making the park's scenic attractions accessible. It also provides for preserving intact certain sections of wilderness which should remain undisturbed.

The adoption of a development program, including yearly requests for sufficient funds to carry out a progressive program of improvements, is strongly recommended as the most economical method of park improvement.

### CRATER LAKE NATIONAL PARK, OREG.

C. G. THOMSON, Superintendent, Crater Lake, Oreg.

#### GENERAL CONDITIONS

Precipitation was subnormal throughout the year. The winter snow load was light and the hottest spring in the history of the Weather Bureau resulted in very early snow recession, the road to the rim being opened on May 27. The rim road opened July 3. All park facilities, including the public utilities, were in operation June 26. An ensuing drought persisted until August 16, resulting in diminishing of water supplies, drying up of some springs and creeks, a critical fire hazard in the forests, and a general dustiness. Travel set in heavily with the recession of snow, imposing extraordinary burdens upon our limited appropriations.

#### OPERATIONS

During the summer a record travel was handled, a total of 26,397 automobiles and 86,019 visitors, as compared with 19,709 automobiles and 65,018 visitors for the preceding year. This great stream of visitors came from every State in the Union and several foreign countries, and it is a pleasure to report all were cared for without a single accident of any kind.

Of this total 85,227, or about 90 per cent, entered in their own vehicles, the balance, 792, were transported by auto stage.

Nightly checks at the principal camp grounds showed that a large number of the total visitors who stayed over night used the park camp grounds. This great number of campers made heavy demands upon sanitation, shower baths, etc. During peak periods our facilities were not abreast of demands upon them. The furnishing of fuel to camp grounds alone overburdened our meager allotments.

The Crater Lake National Park Co. did the largest business in its history. Five new Hudson sedans were secured to replace old auto stages, the closed cars being appreciated by the majority of users. The usual boat service was rendered on the lake.

## DEVELOPMENT

*Buildings.*—The national program of economy reduced our construction items to a total of \$3,800; of this \$3,000 went into the construction of a small warehouse, an attractive building of rough stone walls, with second story of rough boards, battened with shake roof. This is the type of building evolved for use in all future construction here, and is the first building of the utility group planned for headquarters at Government camp.

A fire lookout station was built on Mount Scott, following Forest Service plans. It was in use all summer, the Forest and Indian Services jointly paying the wages of the lookout, and the Park Service furnishing structure, equipment, and supply.

*Roads.*—The road program was taken over by the Bureau of Public Roads upon January 1. This arrangement proved a distinct advantage to the park and a real pleasure to me through a busy season.

Due to the early snow recession, road construction was well under way early in June. The penetration-macadam method attempted last summer having been demonstrated to be costly and unsatisfactory, a change was made to white macadam this summer. Under these new specifications the balance of both the Medford and the Klamath entrance roads were completely surfaced. These two macadam roads were later treated with light road oil, rendering the surface entirely dustless and greatly reducing maintenance costs. Simultaneously, all construction debris was effaced, parking areas widened, guard rails installed, etc., bringing these roads up to high park standards.

A 65-foot rustic span was constructed across the gulch at Anna Spring, greatly improving alignment, facilitating traffic, and permitting the gradual restoration of the spring area.

The new road from Government camp to the rim should be completed, except for surfacing, before snow flies. This new road has a maximum grade of  $6\frac{1}{2}$  per cent and a minimum curvature radius of 100 feet. It terminates at the rim at a spot selected by the landscape division that gives a spectacular first sight of the lake and the crater.

Survey crews spent all summer on relocation of the balance of our park road system.

*Telephone lines.*—New telephone lines were constructed from Government camp to the south entrance; from Government camp to the west entrance; and from Lost Creek to the lookout on Mount Scott—a total of 26 miles of new telephone line, all very satisfactory.

*Public utilities.*—An attractive service station, complete in all details, of stone and rustic construction, was built at Government camp by the Standard Oil Co. of California.

A combined general store and cafeteria was constructed on the rim camp ground by the Crater Lake National Park Co.

## COOPERATION WITH OTHER AGENCIES

The 6.5-mile stretch of highway between Silver Camp and our west entrance was macadamized by State and Federal funds this year. This completes the hard surfacing of the loop road, both the Medford and Klamath roads now being modernized. A few miles of this loop road were oiled by the State, and within two or three years it doubtless will be oiled throughout its length.

We are, as usual, indebted to the Oregon State Game Commission for plantings of trout placed in our waters without charge.

The Cascade line of the Shasta route of the Southern Pacific Railway, connecting Eugene with the Klamath country, was completed this year, bringing a rail terminal within about 20 miles of the park. It is thought that this new rail development will be important to this park from next year on.

In general there is, throughout Oregon, a cordial attitude toward the park and park ideals. The only unfortunate tendency I note is a very considerable increase of advertising along the tourist highways.

## PROTECTION

An insufficient ranger force prevents adequate protection of this 249 square miles of mountainous territory.

Large animal life increased notably during this mild winter. Deer are particularly abundant. Signs indicate an increase in the transplanted elk



that live within and near our southern boundaries. Bears did very well, showing a fine increase, thanks largely to protective legislation granted by the legislature in counties surrounding the park.

Predatory animals were more in evidence than I have known them previously, especially coyotes and wolves.

Small animal life was heavily abundant, the forests fairly teeming with chipmunks, squirrels, and marmots. Porcupines, which last year were a pest, for some reason were greatly diminished this year. Birds were present in greater numbers than any other year except 1923.

Despite a season of extraordinary low humidity, forest fires did very little damage. This was due to a better organization within the park and to cooperation rendered by the Forest Service.

The wild flowers suffered heavily from the drought. A few of the hardier types flourished, but the acres of colorful display usually present on the forest floors were almost entirely missing throughout the summer.

Insect-control work was continued under the direction of J. E. Patterson, of the Bureau of Entomology. Results are not yet entirely apparent, but it seems certain that ravages in the yellow pine at the south border are entirely controlled and that the destruction by pine beetles in the lodgepole has been limited. Following this control work, the debris was effaced from along the roadsides and circulation areas.

#### RECOMMENDATIONS

1. If this park is to reach the highest point of usefulness, a more adequate appropriation must be made available. Now that close to 100,000 people are being taken care of annually, facilities must be amplified. Our appropriation this year is \$35,980. An increase to \$65,000 is earnestly recommended.

2. It is urged that suitable cabins be provided to house our employees, now forced to live in tents.

3. Modern sanitation must be provided at camp grounds, now equipped only with latrines.

4. The Munson Meadow area should be developed as a great camp ground. Wherever possible, camp grounds should be of sufficient area to permit rotation and thus prevent complete destruction of vegetation. This should be possible for years to come, if Munson Meadows is suitably developed.

5. I again urge that mechanical snow equipment be provided to guarantee an earlier season.

6. A growing demand for housekeeping cabins must be satisfied, and cheaper rental cabins also provided near camp grounds.

#### *Total season travel by entrances, 1926 and 1925*

Gateway	By automobile		By motor cycles		By stage	Other means	Total visitors
	Cars	Visitors	Cars	Visitors			
1926							
Anna Spring.....	2, 615	7, 796	2	3	47	22	7, 868
East.....	1, 658	5, 329				6	5, 335
South.....	8, 151	26, 828	7	8	245	80	27, 161
West.....	11, 724	38, 037	34	44	491	55	38, 627
North.....	18	51				17	68
Government camp.....	2, 231	6, 944	2	2	9	5	6, 960
Total.....	26, 397	84, 985	45	57	792	185	86, 019
1925							
East.....	761	2, 502				3	2, 505
South.....	5, 320	17, 936	7	10	171	203	18, 320
West.....	9, 758	32, 319	25	38	613	78	33, 048
North.....	85	285					285
Anna Spring.....	3, 527	10, 790	10	11	38	21	10, 860
Total.....	19, 451	63, 832	42	59	822	305	65, 018

*Revenues*

	1926, fiscal year	1925, fiscal year
Sale of automobile and motor cycle permits.....	\$41, 138. 05	\$39, 395. 57
Collected from concessionaires.....	348. 45	393. 92
Total revenues.....	\$41, 486. 50	\$39, 789. 49

*Appropriations*

Act	Fiscal year	Purpose	Amount
June, 1925.....	1926	Administration, maintenance, and protection.....	\$35, 980
March, 1926.....	1927	-----do-----	37, 160

**PLATT NATIONAL PARK**

WILLIAM E. BRANCH, Superintendent, Sulphur, Okla.

The great decrease in registered visitors at Platt National Park in comparison with last year may be due partly to late abundant crops in Texas and Oklahoma, to unusually cool weather, and to great rainfall during the months of July and August. The following table shows the number of visitors and campers entering the park for the past five years:

Visitors for past five years:		Campers for past five years:	
1922.....	246, 998	1922.....	23, 170
1923.....	470, 840	1923.....	74, 589
1924.....	539, 495	1924.....	95, 272
1925.....	573, 522	1925.....	43, 823
1926.....	248, 569	1926.....	45, 796

There were 11,186 automobiles registered here during this year.

In the past it has been the practice to divide by four the total number of visitors to Platt Park, as it was believed that undoubtedly many of them entered the park several times. This year, however, the number actually recorded should be divided by two only, as a close count was kept and this seems to be a fair estimate. On this basis travel for the year just closed was 124,284 as against 143,380 for 1925.

**SPRINGS**

None of the medicinal springs at Platt, which includes the Bromide, Medicine, and Sodium Chloride Springs in the western part of the park; and the Black Sulphur, Bromide Sulphur, and Hillside Spring in the central part of the park, have decreased in volume during the year; but the great nonmineral springs, Antelope and Buffalo, which are the source of Travertine Creek and located in the extreme eastern part of the park, have been completely dry during the past year. The reason why the Antelope and Buffalo Springs flow some 5,000,000 gallons of water daily for several years and then remain dry for a great period of time has never been satisfactorily explained, although many theories have been advanced by geologists and others.

The medicinal waters here seem to possess great therapeutic properties and are used by thousands of people annually.

**IMPROVEMENTS**

The principal roads at Platt have been widened, graded, and resurfaced with a 4-inch base of crushed conglomerate rock and top course of 4 inches of Troy (disintegrated granite) gravel. Automatic electric pumping units and containers constructed of conglomerate rock have been installed at Bromide

Springs and the old system of hand pumps completely dismantled and done away with. Three double comfort stations were built and completely equipped. Black Sulphur Springs were improved by having the principal spring housed in a container of conglomerate rock. The superintendent's office was renovated and partly rebuilt. All trails have been improved. Considerable time has been spent removing old barns, fences, and unsightly outbuildings. Two small garages were built of material obtained from dismantled old structures. Several buildings were painted and reshingled. The causeway below Bromide Springs, which was damming Rock Creek, was removed by the city of Sulphur and replaced with a suitable structure. Many standard park signs have been mounted and placed in the park.

#### AMPHITHEATER TO BE CONSTRUCTED

The construction of an amphitheater at Platt for summer chautauqua programs is planned by the Oklahoma Federation of Women's Clubs, with the approval of the service. Plans for the amphitheater have been drawn by the service's landscape engineer. The federation also proposes to build an art colony adjacent to the park.

#### STOCKING PARK STREAMS

The Izaak Walton League of America, Sulphur Chapter, has received permission from the department to install and operate a miniature fish hatchery at Platt for the purpose of restocking the park streams.

#### ANIMALS

The park animals are a source of much pleasure to the visitors. There are now 4 buffalo, 4 elk, and 7 deer in the reservation.

#### NEW SUPERINTENDENT

Effective October 1, I accept a transfer to the Bureau of Indian Affairs and Mr. King Crippin, of Oklahoma, becomes superintendent of the park.

### WIND CAVE NATIONAL PARK

ROY BRAZELL, Superintendent, Hot Springs, S. Dak.

#### GENERAL STATEMENT

This park, created by an act of Congress dated January 9, 1903, embraces, with subsequent additions, nearly 12,000 acres in the Black Hills of South Dakota, including the interesting Wind Cave.

A superintendent is in charge, who is assisted by one permanent ranger and a small force of temporary rangers who act as guides in the cave during the summer months. Nearly all of the park's activities are incidental to the protection and maintenance of the cave, and the conducting of visitors through its labyrinthian rooms and passageways. The Department of Agriculture maintains a game inclosure of approximately 5,000 acres within the park, in which bison, elk, antelope, and a few native black-tail deer are being fostered. This game preserve is operated independently of the park by the Bureau of Biological Survey, which maintains a game warden as its supervisory official.

#### THE CAVE

Three routes within the cave are open to the public. These are the Garden of Eden, the Fair Grounds, and the Pearly Gates, of short, long, and medium round-trip lengths, respectively. These routes are equipped with well-built trails and wooden stairs, and bridges and guard rails are provided where necessary. It takes from two to three hours to make either of the three trips. Guides are provided for the safety of the visitor and to protect the many varied formations within the cave. The former fee of 25 cents for this service was on September 1, 1926, raised to 50 cents.



## TIME OF CAVE TRIPS

Visitors are admitted to the cave at 9 a. m. and 2 p. m. daily, the winter months excepted, when but one trip a day is made at 2 p. m. Hummel & Siel, operating out of Hot Springs, the park's railroad town and post office, have been granted a franchise to haul passengers for hire to and from the cave on a time schedule arranged to conform to the hours of cave trips.

## VISITORS

This year has registered more visitors to the cave than any other year in the history of the park. Attendance in the past has about doubled every five years, but if the present rate of increase in travel can be taken as a criterion the attendance should easily treble in the next five years. Due to poor camping facilities and accommodations, only a small per cent of our visitors remain for more than a few hours in the park.

A total of 85,466 people visited the park, 84,996 arriving in 28,332 private automobiles. All the States in the Union except Delaware, Georgia, and South Carolina were represented. There was a general increase in the numbers from the Eastern States, and 10 foreign countries were shown on our register.

## PARK FACILITIES AND ACCOMMODATIONS

Due to the lack of funds, only one small camp ground, not modernly equipped, is provided for our visitors. A confectionery, soft drink, and lunch counter is operated at park headquarters, and is the only place where meals or refreshments are served. No hotel or lodging accommodations, for which there is a growing need, are provided.

## ROADS

The greater part of the 6 miles of park road was reconstructed under the general road budget this year. We now have a road on which all grades have been appreciably lessened, whose curves have their radii greatly lengthened, and which has been materially widened at all points, thus providing a safety factor in the heavy travel we are experiencing. This road is being well maintained as the very limited funds at our disposal will permit.

## REVENUES

Park revenues from all sources, including the grazing of 513 head of cattle on the park range, aggregate \$6,739. The park's regular appropriation for the fiscal year 1926 was \$10,760.

## RECOMMENDATIONS

Adequate water supply, extension of present accommodation facilities, gravel or crushed stone surfacing for the newly reconstructed park road, a park-owned telephone line between the cave and Hot Springs, and a complete electric lighting plant to supplant our present antiquated system of gasoline lanterns and candles for lighting the cave, are all necessary. Our most imperative need is water, and a larger supply must be established if this park is to continue to operate. Provision should also be made for more quarters for park employees, a passenger-carrying automobile for official use, and a maintenance fund ample to meet each year's increasing demands.

## SULLYS HILL NATIONAL PARK, N. DAK.

W. R. BEYER, Acting Superintendent, Fort Totten, N. Dak.

With the completion of the Burtness Scenic Highway entering Fort Totten from the northeast, the roads leading to Sullys Hill National Park, both from the east and west, are now in good shape. Due to these new highways, the number of visitors at the park this year is more than doubled over last year's figures.

Visitors for the season October 1, 1925, to September 30, 1926, are tabulated as follows:

	Autos	Visitors
Oct. 1, 1925, to June 1, 1926.....	474	1,909
June, 1926.....	630	2,594
July, 1926.....	1,387	5,796
August, 1926.....	1,715	8,523
September, 1926.....	278	1,099
Total for the season.....	4,484	19,921

The large body of water known as Devils Lake is rapidly receding. The water is now so salty and alkaline that fish will not live therein. The water supply in this whole lake region is threatened. To remedy this danger prominent citizens of this locality are urging the construction of what is known as the Missouri River diversion project, by which it is planned to divert the waters of the Missouri River at flood season into the waters of Devils Lake.

The parking grounds have been enlarged, more tables have been made, and the new drinking water reservoir put in use. There is a steady stream of 3 inches of spring water that can be used if needed. The water is piped into the picnic grounds.

The number of game animals and birds is about the same as it was last year. Two buffalo and 16 elk were disposed of last fall. Twelve of these elk were sold alive to parks for exhibit and breeding purposes. The other animals were sold for meat. A number of elk and a few buffalo will most likely be disposed of to parks this fall. These animals are increasing and doing well.

## MESA VERDE NATIONAL PARK

JESSE L. NUSBAUM, Superintendent, Mancos, Colo.

### GENERAL STATEMENT

The past season has been the most successful in the history of this national park. The administrative office was maintained at Spruce Tree Camp during the travel season; at Mancos, Colo., 26 miles distant, after the road closed during the winter period. Three permanent employees constituted the year-around personnel, and additional temporary rangers and clerks were necessary only during the travel season. I have been absent from the park but four nights during the past season, all on official business.

### WEATHER

A wet and more or less disagreeable fall and a mild winter with less than normal snowfall was experienced. In April and May there was a period of extreme precipitation, 376 per cent above the normal mean for these months. Since that time precipitation has been subnormal, approaching complete drought in August, usually a month of heavy showers, when rain was most drastically needed to replenish the water supply. August has been abnormally warm during the daytime because of lack of precipitation.

### TRAVEL

Mesa Verde can never hope to compete with the other great national parks in volume of travel because of its comparative isolation. It is far distant from the great east and west transcontinental highways and equally distant from standard gauge rail lines. Colorado's excellent system of scenic mountain highways which are being rapidly improved to higher standards of construction have greatly stimulated travel to this area. Publicity given this area by the Denver & Rio Grande Western Railroad, whose narrow-gauge rail lines come to within 26 miles of park headquarters, together with the excellent descriptive folder of the Western Colorado Chamber of Commerce and numerous smaller leaflets and folders have all served to stimulate travel.

October, the first month of the present travel season, was very wet and disagreeable, and the precipitation of April and early May was disastrous to attendance records. The mountain passes were very late in opening, and

although park roads were in good shape by May 15, the approach roads were most trying. Attendance was approximately 20 per cent below that of the past season on July 1. After July 1, attendance gained by leaps and bounds, taxing facilities to the limit at times to handle the traffic. The final attendance tabulation for the 1926 travel season shows a gain of 24 per cent over that for 1925, a remarkable record under the circumstances.

Publicity has been kept at the minimum, pending the completion of an adequate water system to supply visitors' needs. Advance storage of 90,000 gallons of water during the winter months in anticipation of heavy travel during this season alone prevented closing the park in August. This surplus was practically exhausted on August 30, and as the peak of attendance is passed in the first days of September, the desperate situation confronting the park annually is less serious. The completion of the water catchment area and impounding tanks for precipitation will relieve temporarily the annual "water famine."

Approximately 90 per cent of the total travel entered the park in privately owned automobiles, 2 per cent by rail and stage, and the balance by horseback, hiking, motor cycle, wagon, and on employees', operators', and park-owned conveyances. A study of the travel charts is particularly gratifying in that they show attendance from every State in the Union, from the District of Columbia, Alaska, Hawaiian Islands, and foreign countries as follows: Norway 2, Germany 2, Australia 2, Ireland 3, Cuba 1, Canada 17, Scotland 1, Japan 1, Switzerland 2, Porto Rico 3, Sweden 9, Denmark 1, Italy 1, England 3, France 2, India 1, South Africa 2, and New Zealand 1—growing evidence of the wide-spread interest in the unsurpassed scenic features and archaeological remains of the Mesa Verde.

*Comparative total season travel, 1925 and 1926*

	1925	1926
Transportation companies cars.....	210	236
Private cars.....	7,952	10,407
Second trips.....	410	385
Wagon.....	85	10
Horseback.....	183	102
Hiking.....	35	21
Motor cycles.....	5	4
Miscellaneous.....	163	191
Total.....	9,043	11,356
Total number motorists using hotel.....	3,342	4,150
Total number motorists using camp grounds.....	5,235	6,882
Total number people entering park in private cars.....	7,952	10,407
Second trips.....	410	385
Total.....	8,362	10,792
Total private automobiles entering park.....	2,197	3,054

SERVICE TO THE PUBLIC

Service to the public by the various operators has been satisfactory in every way, but yearly the demand for a first-class hotel becomes stronger and more emphatic, and the increasing volume of traffic will soon warrant the investment. Visitors of a few years back were happy to obtain a floored tent. Now the 24 cottages, 14 of which were erected by the operator this season, are always taken in preference to floored tents, and the requests for rooms with bath become more incessant. The Spruce Tree Camp Lodge operator increased sleeping accommodations by erecting 14 comfortable cottage-type buildings, 6 floored tents, installed electric refrigeration and other service betterments, but must enlarge dining-room and kitchen facilities for the coming season, and add additional chemical-type toilets.

The Mesa Verde Pack & Saddle Co. is just meeting operating expenses for the first time, and next season should show a small profit on the operation.

Automobile stage service from the Santa Fe lines at Gallup, N. Mex., by the Gallup-Mesa Verde Stage Line, and from the Denver & Rio Grande Southern lines at Mancos, Colo., by the Mesa Verde Transportation Co., has been satisfactory, and a slight increase in number of visitors so handled is recorded.



## DEVELOPMENT OF ADMINISTRATIVE HEADQUARTERS

Gradually but surely Spruce Tree Camp, park headquarters, is assuming the form and appearance of the plans and sketches that Mrs. Nusbaum and I submitted for approval to the director and landscape engineering division of the National Park Service nearly six years ago. The layout is unique; the buildings in form and treatment follow an adaptation of the early modern Pueblo Indian style; the interior furnishings are in conformity with the earliest type of furnishings used in the Southwest, and are made for the most part by the park personnel from native materials at a minimum of cost to the Government during spare time in the closed season.

The Aileen Nusbaum Hospital, a congressional recognition of the efforts of Mrs. Nusbaum in developing this park, is over half completed. This provides an emergency hospital unit, well-equipped to care for emergency sickness and accident cases of visitors and employees within the park.

The small home for the chief ranger will soon be completed, providing this employee with comfortable quarters. The old log cabin, used first as a ranger station, later as a museum and rest room, will be moved to the public camp grounds later this fall as a shelter for campers, and on the old site the new community house, in keeping with the other administrative buildings, will be erected, providing a restful and comfortable meeting and gathering place for the use of park visitors.

The plans for the three foregoing buildings were prepared by Mrs. Nusbaum and myself.

A unique system of obtaining additional water for camp use is now being installed. This consists of 1 acre of galvanized corrugated roofing, so set on a low framework as to gather all the precipitation falling thereon, which is passed through a rapid sand filter to two steel tanks holding 125,000 gallons each. The catchment area and tanks are located one-half mile above headquarters and will supply approximately 400,000 gallons of pure rain water per year to meet the increasing demands. This construction project will be completed late this fall.

## GROWTH OF THE PARK MUSEUM

No single activity within this park has received more favorable public approval and encouraging support than the park museum development, made possible almost in its entirety by friends of this park through gifts and financial assistance. The large building, the fine exhibit cases, the furniture, furnishings, and other equipment, the reference library of upward of a thousand titles covering information of particular interest to visitors to this park, the paintings of Indian ceremonies by the Indians themselves, together with certain archeological and ethnological exhibits, indicate the healthy support given this educational activity and development. In addition funds have been pledged to the extent of approximately \$9,000, covering enlargement of the present building, display cases for exhibition of material not yet on display, and to permit continuance of the winter excavations which have so greatly added to our knowledge of the prehistoric cultures here, and enlarged our archeological exhibits.

Every park visitor is interested in the museum exhibits; many call for particular subjects or publications in the reference library in gaining additional information; some request reading lists for future use; and others have become well known to the park personnel because of the time spent in study in the park museum.

Late last fall we made the bases and shelving for eight large library bureau wall cases, manufactured under the Bumpus patents and acknowledged the finest type of display case made, and later assembled and erected the cases in the second large exhibition room. Furniture was also completed for this room. On the return from a six weeks' winter excavation expedition, the material gained was scientifically prepared and installed in these new cases, thereby more than doubling the scope and extent of the exhibits of the past season. Mrs. Nusbaum ably assisted me in preparing and installing the exhibits and helped train others to assist in this important museum work.

## ARCHEOLOGICAL INVESTIGATIONS

One loyal supporter of park museum activities has established a fund which enables us to carry on intensive excavations each winter, for the purpose of gaining additional information to impart to our visitors at the camp-fire

talks, and to increase and broaden the scope of the museum exhibits and collections.

Six long cold weeks this winter were devoted to intensive excavation under my direction of several sites within the park. At Step House Cave on the west side of the park, three post-basket-maker homes were uncovered, the first evidence that this very early culture, greatly antedating that of the cliff dweller, also sought home sites in this section, approximately 150 miles nearly north and nearly 100 miles east of their previously known cultural areas. An important collection was made at this site and one large case in the museum has been devoted to its display. The invention of pottery by the post basket maker from the crude ware of untempered and unfired clay to the final stage when embellishment by use of slips and decoration was rapidly advancing, is clearly shown in chronological sequence in the museum display.

Near the head of Fewkes Canyon, directly across from the New Fire House, some excellent specimens of post-basket-maker handicraft were found far in the depths of a supposedly barren cave. Excellent cliff dweller material was found in a small cliff-dwelling ruin in Long Canyon previously excavated by John Wetherill in 1891, and also within two partially excavated kivas in a small cliff ruin on the east side of Soda Canyon.

The testing out of several kivas and rooms previously excavated by pot-hunters 30 to 36 years ago, and 12 to 15 years before this area was created a national park, indicate that, due to the careless methods of the early pot-hunters, much can still be regained by scientific excavation. Many excellent specimens of cliff dweller origin were found during the season on the surface off from the trails by my son, Deric, and various park visitors, and were turned in to the museum for cataloging and display.

#### PUBLIC CAMP GROUNDS

The necessary enlargement of the public camp grounds was completed ahead of the demand by extending roadways and camp sites northward along the rim of Spruce Canyon from the present area. A chemical-type comfort station was erected on the lower camp ground this spring, replacing the old farmhouse types, which were moved to the extended camp ground for the balance of the summer. A second chemical-type comfort station will be necessary next season. The cleanliness of the public camp grounds has been most highly commended by all campers.

#### WATER SITUATION

By pumping all surplus water available during the winter months to storage tanks above camp, a surplus of 90,000 gallons was gained and conserved for use during the rush season when the meager supply available daily from the seeps, etc., in the head of Spruce Tree Canyon would not begin to supply the demand. This surplus was nearly exhausted on September 1, even though restrictions were placed on water usage. But for the surplus, the park would have been forced to close for lack of water shortly after July 15.

Progress on the new construction of the auxiliary water system, consisting of a precipitation catchment area 1 acre in extent, from which rain and snow falling thereon is conducted through rapid sand filters to two 125,000-gallon frost-proof steel tanks and thence distributed to the present supply lines, has been very slow. The amount appropriated by Congress was less than the estimate, bids on concrete construction exceeding the amount available by \$8,000, and revision of plans and specifications was necessary. Contracts have been let for supplies and materials and the preliminary work is nearly completed, so by the time snow flies the project will be completed for the most part under force account by park forces.

This system of supplying water was the result of a study of conditions obtaining here by the water resources division of the United States Geological Survey and myself, and the appropriation therefor was sponsored by the sub-committee on Interior Department appropriations and the Bureau of the Budget following their personal investigation of conditions here a year ago. Whether the quality of the water impounded for six months to a year in steel tanks will be satisfactory for human consumption is an undetermined question as yet. The unit under construction will not begin to supply the additional water necessary here within the course of the next few years. If water of a satisfactory quality is obtained in this way, additional units will be necessary.

## EVENING CAMP FIRE TALKS

As heretofore, informal camp-fire talks on the archeology, history, geology, flora, and fauna of the park area were given by the superintendent and chief ranger, temporary rangers sometimes assisting, each evening during the summer season at the camp fire circle at headquarters. Noted visitors at times talk informally on points of interest within the park, and occasionally famous singers have favored us by singing from the depths of Spruce Tree Ruin across the canyon. Six selected Navajo Indians employed here conclude the program with three parts of the famous Yeibachai ceremony.

## "FIRE"

Especial significance is attached to the element of fire in the mythology, the folklore, and the present-day ceremonies of both the Navajo and the Pueblo Indians, and since one ruin on this park was undoubtedly dedicated solely to fire worship, Mrs. Nusbaum conceived the idea of reenacting in Spruce Tree House a sacred fire ceremony, such as probably took place here 8 to 12 centuries ago, basing her story on the scientific background of the Hopi and Navajo fire ceremonies. She wrote the play, designed the costumes, secured the good will of the Navajo medicine men, overcame their prejudices, and trained 40 Navajo men, few of whom speak any English whatever, to their parts.

The play has been produced three times this season as a part of the educational work of this park. On October 4, while the national park superintendents annual conference was in session here, Mrs. Nusbaum gave the play for the enlightenment of the National Park Service officials, the park superintendents and their wives, and cooperating bureau officials to demonstrate the educational possibilities of such a production. On the evening of June 16 the play was again produced on the occasion of the visit of the Rockefeller party in recognition of the intense interest of Mr. John D. Rockefeller, jr., and the Laura Spelman Rockefeller Foundation in National Park Service activities.

On July 19, the play was given for the last time this season, in honor of the visit to this park of Crown Prince Gustaf Adolf and Crown Princess Louise of Sweden and their royal party. They were tremendously impressed.

Approximately 800 visitors witnessed the three productions, which would be impossible but for the whole-hearted cooperation of the park personnel and the Navajo Indians employed here. Our warmest thanks are due to the Denver & Rio Grande Western Railroad which furnished part of the flares used, and to our friends who assisted us financially in caring for the expenses of these productions.

## FLOWERS

Never before within my memory has the Mesa been so completely resplendent in blooming shrubbery and native wild flowers which, following the unprecedented precipitation of April and May, formed a halo of color over the more open country on the north rim. Abnormally dry and warm weather during July and August checked this most wonderful display. Visitors said that the flowers of Mesa Verde in May and June rivalled the well-known flowered areas of Mount Rainier National Park.

## WILD ANIMALS

Abnormally warm and dry weather in July and August forced the deer to higher altitudes, but many have been seen by park visitors in the spring and fall months, 17 being the maximum seen in one group adjacent to the road in Morefield Canyon. One young buck was drinking regularly at the water trough in the industrial group of buildings. Five brown bear have been seen this season, including two yearling cubs. Coyotes and porcupines are getting too numerous and must be controlled. Bobcats, kitfoxes, and badgers are often encountered. Ringtailed cats found our home to their liking, apparently, and usurped our rights for a while during the winter, and now but four remain. Three known mountain lions will be killed off this winter if possible, for the protection of the deer. Wild horses, cattle, and burros, much wilder than the so-called wild animals, still hold their own regardless of the occasional hunts of the cattle men, Southern Ute Indians, and Navajos, who at my request have attempted to round them up and remove them.



## ROADS

Because of the unconsolidated condition of the heavy fresh fills on new road work just completed late last fall, approximately \$200 was expended in grading off the snow to prevent the formation of hydraulic fills behind the retaining walls supporting them. Since the snowfall during the winter was subnormal, the roads were easily opened and placed in fair travel condition by the end of March. Unprecedented precipitation, amounting to 376 per cent of the normal mean monthly precipitation during April and the fore part of May proved disastrous to sections of the new work, and the bank slopes rising to considerable heights above the road grade became so water-soaked as to slip, slide, and literally flow over the road below, obliterating it at some points. The roads were finally opened again in May, assuming a state of respectability by May 15, when the park season opened. Road crews were engaged for the following six weeks in cutting back ragged slopes to an angle of repose and placing additional culverts, and at the close of the heavy travel season will complete this work.

Automobile traffic has gained nearly 50 per cent in volume during the past season, while visitor attendance gained less than 30 per cent. A few years back, Fords constituted over 50 per cent of the cars entering the park, all loaded to the limit with passengers, the household furnishings lashed to the running boards, fenders and back. Powerful, speedy, heavy closed cars, with few passengers, predominate now, and in muddy weather tear our clay, red-soil, gumbo, and slippery shale roads all to pieces in an hour's time. The reconstruction of the park entrance road will be nearly completed before winter sets in, and next spring graveling of the entrance road must commence if the road is to be subjected to this very rapidly mounting traffic. Graveling alone will permit me to keep maintenance cost per mile within reason.

## NEW CONSTRUCTION

On December 15,, the upper 32 stations of the A line section of the park entrance at the foot of Point Lookout was completed, on a maximum of  $6\frac{1}{4}$  per cent gradient, a radical improvement over the narrow road ranging from 17 per cent to a maximum of 26 per cent in gradient. This spring the balance of this line from station 32 to the park boundary, station 55, was completed, thereby doing away with the last 17 per cent gradient on the entrance road. No grade now exceeds 10 per cent. The west end of the D line construction is going slowly because of the unforeseen presence of innumerable seams of very hard siliceous sandstone, which requires constant stripping, drilling, and shooting to remove.

The east end of the line will be completed by September 30, at latest, when traffic can be directed over this scenic section. The distance from the park boundary to park headquarters, when this section of road is thrown open to travel, will be 11 miles less than when I assumed charge of this park in June of 1921.

## PARK SUPERINTENDENTS' ANNUAL CONFERENCE AT MESA VERDE

Director Mather announced the holding of the annual conference of park service officials and officials of cooperating bureaus for Mesa Verde, October 1 to 6, and directed the park superintendents of Yellowstone and Yosemite to head two motor caravans, inspect national parks and monuments en route, and add to their caravan in additional cars, if necessary, the designated personnel of that area. The motor caravan idea was most successful, and enabled officials to inspect the operation of other national parks in proceeding to and from the Mesa Verde. Many wives accompanied their husbands to the meeting.

The five-day conference held here was most successful from every point of view. Time between executive sessions was devoted to an inspection of this park's activities along every line, and the main runs and points of interest were visited under my guidance. An informal reception at our home, a beef-steak fry on the rim of Soda Canyon, a banquet at the lodge, and the play "Fire," all arranged and carried out by Mrs. Nusbaum, provided evening diversion and entertainment. We trust we can again be the hosts for the annual conference.

## VISIT OF ROYAL SWEDISH PARTY

In accordance with instructions, I arranged transportation by auto, met and conducted Their Royal Highnesses, Crown Prince Gustaf Adolph, Crown Princess Louise and their royal party, 11 in all, from Gallup, N. Mex., to the park and return, approximately 400 miles, largely through the Ute and Navajo Indian reservations. During their two-day stay here, the major ruins were minutely inspected, much time was devoted to study of collections in the park museum which His Highness declared one of the finest arranged museums in this country. Our methods of handling the educational work here were highly commended.

Mrs. Nusbaum, assisted by invited friends, arranged the luncheon at the lodge on the arrival of the party, a tea at our home for the royal party only on return from the afternoon trip to the ruins, a beefsteak fry on the ledge overlooking Balcony House that evening, a second tea and reception at our home the next afternoon to which park personnel and personal friends were invited, and that night the play "Fire" was given in honor of our royal visitors. The following morning about daylight, the Crown Prince, Colonel Solbert, Count de Posse, and myself proceeded to a group of prehistoric Indian burial mounds 108 miles distant and spent many hours in successful excavation before the Crown Princess and the rest of the party arrived to continue on to Gallup. Never has this park been host to more keenly interested and appreciative, and I might add, more democratic visitors than the royal Swedish party.

## GLACIER NATIONAL PARK

CHARLES J. KRAEBEL, Superintendent, Belton, Mont.

All activities in Glacier National Park during the season of 1926 were so overshadowed by the imperative need of fighting forest fires that no record can be made of any feature without reference to the manner in which it was affected by these fires. The entire northwestern United States was visited this summer by a prolonged period of hot, dry weather, accompanied by high winds. The dense forests which characterize the west slope of the Rocky Mountains became thoroughly dried, and fires once started were frequently fanned by the hot winds beyond human control.

Glacier National Park consequently shared with the national forests of Montana and Idaho the unhappy distinction of suffering the worst fires since the terrible season of 1910. During a period of 10 days in August, there were over 700 fire fighters distributed in 20 camps throughout the west side of the park. The prodigious task of organizing this large force for effective work and of feeding and supplying it with necessary tools and equipment completely absorbed the energies of the superintendent and office staff and most of the ranger force during practically the entire park season. All work, such as road and trail maintenance, construction, and repair of buildings, suffered greatly or had to be completely abandoned.

Invaluable aid in this severe emergency was given by Asst. Director H. M. Albright (field) who spent nearly all of August in the park in general charge of the fire situation. He brought with him Chief Ranger Woodring and Assistant Chief Trischman of Yellowstone Park, and their experience in fire fighting and ability to handle large crews of men were sorely needed to augment the limited permanent force of Glacier Park. Associate Landscape Engineer Vint and Assistant Superintendent Allen of Rocky Mountain Park proved able and valuable executive assistants during the worst period in August.

On the date this report is prepared, the total fire expenses are not yet available, but it is believed that they will reach the enormous sum of \$190,000. Approximately the same amount was expended by the adjacent Blackfeet National Forest, from which our most disastrous fire swept across the North Fork of the Flathead River into the park. For several days before this occurred, park forces were engaged on the forest side attempting to curb the fire there and prevent its reaching the park. During the entire fire season, effective cooperation between the park service and the Forest Service was carried on. The summer's experience has forcibly demonstrated two things: First, that our fire prevention system must be improved by increasing the number of fire lookouts and patrolmen, or "smoke chasers"; second, more elastic authority is needed by the National Park Service to incur expense for fighting fire. In

two successive seasons the cost of fires in Glacier National Park alone has greatly exceeded the allowance of \$40,000 allotted to the entire National Park Service for fire and flood damage. The effect of this limitation has been to cripple all normal activities in the Glacier National Park, demoralizing its personnel and greatly retarding the normal development of the park.

#### WEATHER

The weather throughout the year was not only unusual but phenomenally so. Spring-like temperatures prevailed all winter, the minimum being  $-3^{\circ}$  as against  $-42^{\circ}$  last year. The total snowfall of 61 inches at park headquarters was the lightest on record and compares with 145 inches of last year. The heaviest snowfall during one month was in January which recorded 30 inches, while January, 1925, recorded 63 inches. This year snow disappeared entirely at headquarters on March 24, while last year on the same day snow lay 24 inches deep.

Forest-fire weather began early in May and continued until after mid August. Temperatures of  $94^{\circ}$  and  $95^{\circ}$  were reached frequently during June, July, and August. Lakes reached new low levels, many streams dried up, and springs failed which were believed perpetual. Unprecedented winds prevailed all summer, and in July, when forest fires were at their worst, the wind blew the hardest ever known in this region, tearing the roof from a barn on a ranch where high winds were theretofore unknown. On August 26 a tornado swept through the park, tore the tops from several automobiles, and brought a great wreckage of trees and telephone lines down across roads and trails. On September 22 a severe blizzard precipitated the park into mid-winter conditions, the thermometer falling to  $7^{\circ}$  at Headquarters and  $-4^{\circ}$  on the east side. Snow fell over the entire park, soon disappeared on the west side, but reached a depth of 50 inches at Many Glaciers.

#### TRAVEL

In 1925 a number of large conventions on the Pacific coast brought many special trainloads of visitors to Glacier and helped to increase our travel total for that year by 20 per cent over the 1924 figures. Since there were no such conventions this year to introduce an abnormal increase, we may consider that the total of 37,235 visitors in 1926 represents a healthy normal increase in visitors to this park. Exaggerated reports of the forest fires in the park, printed in eastern newspapers and heralded by scareheads on the front pages of papers in near-by cities, were responsible for a decided falling off of travel after August 1. Although corrective publicity was promptly issued, the effect of the earlier reports could not be overcome and our total travel suffered accordingly. The extremely cold and rainy weather which prevailed during late August and all of September constituted another serious deterrent to travel, especially the motorists. It is interesting to note that the automobiles entering during 1926 carried a higher average number of people per car than the cars which entered in 1925. This may indicate that people are purchasing larger cars and traveling in larger parties.

#### *Travel by entrances*

Entrance	Private automobile		Private motor cycle		Saddle horse, team, and foot	Stages	Boats	Totals
	Cars	People	Cars	People				
Belton.....	2,343	7,992	-----	-----	82	1,496	-----	9,570
Sherburne Lake.....	1,065	3,560	3	3	27	-----	-----	3,590
St. Mary.....	1,121	3,747	1	3	34	8,744	-----	12,528
Two Medicine.....	1,673	6,469	1	2	78	1,762	-----	8,311
Belly River.....	-----	-----	-----	-----	230	-----	-----	230
Waterton Lake.....	-----	-----	-----	-----	-----	-----	1,429	1,429
Total season.....	6,202	21,768	5	8	451	12,002	1,429	35,658
Out of season.....	523	1,779	-----	-----	-----	-----	-----	1,779
Total travel for season.....	6,727	23,547	5	8	451	12,002	1,429	37,437



Visitors this year (Oct. 1, 1925, to Sept. 30, 1926)-----	37, 437
Visitors last year (Oct. 1, 1924, to Sept. 30, 1925)-----	40, 063
Decrease this year-----	2, 626
Automobiles this year-----	6, 727
Automobiles last year-----	7, 585
Decrease this year-----	858
Visitors by automobile this year-----	23, 547
Visitors by automobile last year-----	23, 102
Increase this year-----	445

#### CAMP GROUND VISITORS

The most important automobile camp grounds in the park are at Two Medicine and Many Glaciers on the east side and at Avalanche and Spray Creek on the west. During July and August the Two Medicine grounds averaged 25 to 30 cars per night, the Many Glaciers ground somewhat less.

At Avalanche Camp, during July, 56 cars established camps of several days' duration, while a total of 738 cars carrying 2,657 people used the grounds for picnic purposes. No records were kept at Spray Creek but the camp averaged 3 camping parties per day.

#### ROADS—CONSTRUCTION

Great progress was made on the Transmountain Road (west slope), the contractor having finished over 2 miles and opening the entire project to Logan Pass. Five camps were maintained with an average total of 225 men. The contractor plans to continue working with a small crew on a 400-foot tunnel throughout the winter. Work was seriously interrupted by the necessity of taking large numbers of the workmen to fight forest fires. These men were returned as soon as they could be either replaced or safely spared. Their availability was an important factor in enabling us to check the fire in the Lake McDonald area and prevent its spread over the entire lake district.

During the year a way was found to employ the savings, realized from the sale of explosives to the contractors, in gravelling and finishing the 4-mile Mount Cannon section of the Transmountain Road. This work is still in progress. A further serious slipping of the long log cribbing in this section indicates the complete failure of the crib. Engineers are practically agreed that the crib should be removed and a regular hillside section substituted. The cost of this change is estimated at \$6,000.

The Two Medicine project is near completion but, owing to the inadequacy of the contractor, it can not be completed this season. Gravel surfacing will have to be done next season and it is doubtful if the allotment is sufficient to make a thoroughly finished road. Finishing requirements will be considered by the bureau engineers during a reconnaissance of the entire Two Medicine Road.

The Blackfeet Highway is the name given to the road through the Blackfeet Indian Reservation which gives access to the east side of Glacier Park. This entire road, from Glacier Park Station to the Canadian boundary, a total distance of 55 miles, is now covered by contracts calling for its complete reconstruction by the State of Montana with 100 per cent Federal aid funds. Project 210, 6 miles long on Hudson Bay Divide, was completed and turned over to the park administration for maintenance in August. Project 208, 11 miles from Babb to the Canadian boundary, should be completed in November, 1926, but dilatory methods of the contractor make completion at that time appear improbable. Assurance is given by the State highway commission that the project will be finished before June 15, 1927. Fortunately, automobiles were permitted to use the graded road this season.

Projects 226 and 227, embracing the remaining 38 miles of the Blackfeet Highway, were placed under contract in April, the total estimated cost being \$553,000. On September 4, contract was let covering construction of the seven concrete bridges of this project, to cost approximately \$175,000. Work on the road construction was vigorously pushed during the past summer and it is expected that the new highway will be completed by November, 1927.

The rapidity with which these plans for the reconstruction of the Blackfeet Highway have been perfected compels the immediate consideration of similar

plans for the spur roads extending from the highway into the several valleys of the park. A survey of the road to Many Glaciers (13 miles) is now under way and a preliminary survey is planned for the remaining portion of the Two Medicine Road (3 miles) extending to Two Medicine Chalets. The Cut Bank spur road of 6 miles is comparatively unimportant and is given last place on the east side road program.

Severe forest fires in the Polebridge district emphasized the need of early improvement of our north fork road. This road will ultimately have to be completely reconstructed and extended to the Canadian boundary in order to join with the road system proposed by the Canadians. All improvements made for administrative purposes will contribute to the consummation of this plan.

The forest highway under construction parallel with the Great Northern Railway, from Belton to Glacier Park along the south boundary of the park, will require approximately \$360,000, after the present fiscal year, for its completion. Based on the usual seasonal allotment of \$100,000, it is expected that this road will be completed during the summer of 1930. The next contract on this road, extending from Essex to Java, will carry the road for approximately 5 miles inside the park boundary. A bridge across the Flathead River at Essex carrying the road into the park is now under construction.

#### ROADS—MAINTENANCE

The appointment of a permanent resident engineer in April has made possible considerable improvement in our maintenance methods. The policy was adopted of powerizing or motorizing this work wherever possible, using Fordson tractors and power graders instead of horses. This system has produced very gratifying results and in spite of the serious interruptions of maintenance work on account of fires, the roads were kept in good condition throughout the season. The division of our entire road system into sections approximately 10 miles long made possible the employment of smaller gangs of workmen at much less expense than formerly.

The north fork road suffered severely from the constant heavy traffic incident to the fires. The damage from this cause is estimated at \$3,000. Five bridges were burned and two of these are still to be constructed. The headquarters-avalanche road was also severely broken by heavy trucking incident to the Transmountain Road construction work and could not be maintained in its usual good condition.

#### TRAILS

Approximately 6 miles of new trail were constructed from the Glacier Hotel up McDonald Creek, in order to replace the trail obliterated by the Transmountain Road. At one point this trail is passed over the road by a unique bridge built of cedar logs, and across McDonald Creek by a similar bridge. The trail will be continued on the west bank of McDonald Creek in order to keep horsemen out of the Transmountain Road. When completed, this trail will connect Granite Park Chalet and Glacier Hotel on Lake McDonald.

Owing to the light snowfall, all passes were open before June 10.

#### BUILDINGS

New buildings constructed during the year include a garage at park headquarters, an addition to the garage at Glacier Park station, ranger station at Belly River, and two snowshoe cabins. Owing to extremely adverse weather conditions and excessively long haul for materials, the Belly River station could not be completed within the funds allotted. The windows, floors, and general finish still remain to be placed.

Alterations to buildings included finishing the second floor of the office building at headquarters, moving of the unused stable at Glacier Park and conversion of that building into temporary living quarters, and numerous minor repairs to warehouse, residences, and ranger stations.

#### HYDROELECTRIC PLANT

The operation of our small power plant has been very satisfactory. Our water pressure dropped two months early, necessitating the installation of a smaller nozzle on July 5, as against September 10 a year ago. The present plant is

far below our needs during the winter months. A 5-kilowatt gasoline plant would be an economical auxiliary to the electric plant and would take care of the new buildings and new machinery which have been installed at park headquarters during the past several years.

#### TELEPHONES

Our telephone lines were very severely damaged during the fires, requiring the reconstruction of approximately 25 miles of line. With the assistance of the Bureau of Public Roads engineers and the contractors on the Transmountain Highway, a new line was constructed along the Transmountain Road from the head of Lake McDonald to Logan Creek, to connect with the headquarters of this large road-construction project. This line was an urgent necessity as a measure of precaution in case of fire.

#### EDUCATIONAL ACTIVITIES

The ranger-naturalist service was conducted along the lines of previous years. Exhibits of rocks, flowers, photographs, and other material, augmented by lectures in the lobbies of the Many Glaciers Hotel, Going-to-the Sun Chalet, and Glacier Hotel, presented to the public a constant exposition of park features. It is doubtful if any tourist visited the park for a day or more without coming in contact in some way with one of the three-ranger-naturalists or with the material they prepared for study. Owing to the excessive dryness the flower exhibits were maintained with difficulty since the park flora reached the autumnal stage early in the summer. Moving pictures on scientific subjects were used for the first time and brought appreciative comment from many visitors. Another innovation was the establishment of nature trails along which explanatory labels made possible self-instruction to hundreds of enthusiastic visitors. The quick response to this experiment indicates its great value as an educational feature which should be continued and enlarged.

#### FISH

A total plant of 3,226,600 fish dry and eyed eggs during the season established a record for Glacier Park. The plant included black-spotted, eastern brook and rainbow trout, grayling and Great Lakes whitefish. During the past few years much planting had been done in remote waters, while this season the planting was confined largely to the heavily fished waters accessible to motorists.

#### ANIMALS

Owing to the very mild winter almost no game feeding was done. Therefore, the game able to find natural feed, remained widely scattered, making it impossible to secure a game count. This same condition operated to the great advantage of the offspring and, since all animals observed were in excellent condition throughout the year, it is believed that there was a heavy general increase over the numbers reported last year. Many white-tailed does were seen with two fawns apiece and several instances of does with three fawns were noted. It is probable that a few of the larger game animals met death in the fires. One such deer was found and one beaver house with its inmates destroyed.

#### FIRES

The 23 forest fires which occurred in Glacier Park during the 1926 season constituted the most disastrous fire season in the history of the National Park Service. The periphery of these fires embraces over 50,000 acres, but owing to the amount of unburned timber within the fire lines, this figure greatly exaggerates the real damage. The most severe fire swept the forested slopes of the Apgar Mountains, where the timber of the upper slopes was completely destroyed by fierce crown fires. The beautiful timbered shores of Lake McDonald were this time actually reached by the fire, but by strenuous efforts the damage was confined to about 1 mile of the west shore where it is farthest away from the traveled road. The 300-acre fire at Lake McDermott threatened the most serious damage owing to its proximity to Many



Glaciers Hotel, the largest hotel in the park. By quick concerted action, in which all the concessionaires vigorously joined with the ranger force, this fire was controlled and completely extinguished under adverse weather conditions. The portable fire pumps here again proved to be the most wonderful fire-fighting equipment in existence.

The one fortunate fact, if indeed anything fortunate can be found in so disastrous a situation, is that the big fires were all confined to areas which are seldom visited by the public and where they will be little seen. Further details on the fires are reserved for a comprehensive fire report.

## ROCKY MOUNTAIN NATIONAL PARK

ROGER W. TOLL, Superintendent, Estes Park, Colo.

### ORGANIZATION

The permanent organization of this park consists of the superintendent, assistant superintendent, chief clerk and special disbursing agent, clerk accountant, three permanent rangers, resident engineer, general foreman in charge of road maintenance, storehouse clerk, and auto mechanic. In addition 1 temporary clerk stenographer, 1 clerk in charge of information bureau, 1 park naturalist, and 12 temporary park rangers were employed during the summer season. Men were employed as needed for work on roads, trails, buildings, and on other maintenance and construction work. The total organization, exclusive of road contract work, varied from 120 persons in the summer to 11 in the winter.

### CHANGE OF PARK BOUNDARY

On June 9 the President signed a bill changing the eastern boundary of this park to exclude much of the privately owned land formerly within the park area. The boundary line was moved back approximately 4 miles west of its former location. The total area of the park was reduced from 397 square miles to 378 square miles. Checking stations were established at or near the points where the new boundary intersects the roads.

### WEATHER CONDITIONS

The early part of the winter was mild and open; the latter part was stormy and cold. There was a wet spring and a late summer. Cool weather continued well into July. The open portion of the winter was favorable to winter travel, but the cool, rainy summer was unfavorable to travel in June and July. Weather conditions were particularly favorable to all kinds of plant and flower life, which flourished last summer in unusual beauty and luxuriance.

The total snowfall recorded at the Estes Park Fish Hatchery was 119 inches against 49 inches the preceding winter. In the higher altitudes the snowfall was much greater than this. While the snowfall in Estes Park was practically normal, it seems to have been above normal in the vicinity of Fall River Pass, and as the heaviest storms came late in the winter, the amount of snow on the ground June 1 approached the maximum of recent years.

### SNOW REMOVAL

The heavy snowfall in the higher altitudes last spring made the task of opening the Fall River Road to travel much greater this year than usual. This work was begun on the eastern side of Fall River Pass on April 28 instead of May 15, which has been the usual day of starting work. On the western side the work began on May 15.

The most of the work on the eastern side of Fall River Pass was done with a steam shovel equipped with a yard-and-a-half snow dipper, while on the western side of the pass the work was accomplished by men and teams. The snow was especially heavy on the western slope, while at the two largest drifts east of the pass the depth exceeded 20 feet. It was necessary for the shovel to clear a path 14 to 15 feet wide to have room to work. As a result

of this a considerably larger volume of snow was handled than in previous years when the work was done by men and teams, but on account of the wider clearing the roadway dried much quicker than usual.

One feature that made the work of snow removal particularly difficult this year was the running of three snow slides at points  $12\frac{1}{2}$  to  $13\frac{1}{2}$  miles from Estes Park. The lower of these slides, known as the "Fan" slide, covered 410 feet of roadway with snow varying in depth from 5 to 20 feet. The middle slide, known as "Old Faithful," gave unusual difficulty. One day after the roadway had been opened through the slide one of our trucks which was in the cut was completely buried by a fresh slide, which came so quickly that the driver had barely time to escape to a place of safety. The roadway through this slide had to be cleared 10 different times.

Snow removal work was completed on the afternoon of June 13, a trial trip was made on June 14, and the road was opened to public travel on the morning of June 15.

The estimated quantity of snow removal of this year is as follows:

Hand shoveling, on 4 miles of road, from a point above Chasm Falls (10.2 miles from Estes Park) to Willow Park (14.7 miles from Estes Park)-----	Cubic yards 7,758
Steam shovel, on 3 miles of road, from Willow Park to Fall River Pass (17.8 miles from Estes Park)-----	70,628
Hand shoveling on 8 miles of road west of Fall River Pass-----	40,973
Total-----	119,359

#### TRAVEL

With the change of boundary which became effective on June 9, the gateways on the eastern side of the park were moved from their previous locations about 2 miles from Estes Park, to new locations about 6 miles from Estes Park. Eighteen miles of road were eliminated from the park. Parts of the Moraine Park Road, the Bear Lake Road, the Fall River Road, and the Highdrive are eliminated from the park. All of the Longs Peak Road, the Wind River Road, and the Moraine Park Cut-off Road are eliminated from the park. Travel from Estes Park to points on these roads was previously counted, but is not now counted. This change of boundary resulted in a marked decrease in the travel count. No count was maintained on the Moraine Park Road nor on the Mill Creek Road. There is considerable travel entering the park that is not counted, such as visitors to Gem Lake, Twin Sisters, Longs Peak, Wild Basin, and on trails in the Grand Lake region. An estimate is submitted of this travel that is not counted.

Rangers were on duty at four gateways, namely, Fall River Road, Highdrive, Bear Lake Road, and Grand Lake, from June 12 to September 15, inclusive. The travel count is taken for 9 hours per day, during a three months' period. The park is open to travel 24 hours per day throughout the year. In making up the total travel, the following points are considered:

1. Actual count at four entrances, 9 hours per day, from June 12 to September 15, inclusive.
2. Estimated travel at these entrances during the same period, at hours when rangers were not on duty.
3. Travel at other entrances during the same period, not included in the above.
4. Estimated travel from September 16 to June 11, inclusive, when no count was made.

The total travel for this park is therefore made up partly from actual count and partly from estimates.

The total travel reported below is somewhat less than that of last year. Some of the hotels report less business than last year on account of rainy weather in the park during June and July. People in the Middle West take their vacations when the heat becomes oppressive, and reports indicates that there was less travel than usual during July because of cool weather in the Mississippi River Valley. A few hotels report an equal or greater amount of business than last year.

*Estimated travel for 1926*

	Total travel	
	Cars	People
Actual count at 4 gateways:		
June 12-30, inclusive.....	3, 102	10, 794
July.....	10, 765	40, 951
August.....	12, 181	48, 313
Sept. 1-15, inclusive.....	3, 092	10, 655
Total actual count.....	29, 140	110, 713
Estimated:		
Missed by rangers at these entrances, during same period, 30 per cent.....	8, 742	33, 214
Travel at other entrances during same period.....	4, 500	50, 000
Travel during months of year when no count is kept:		
October, 1925.....	500	2, 000
November, 1925.....	250	1, 000
December, 1925.....	150	600
January, 1926.....	125	500
February, 1926.....	750	3, 000
March, 1926.....	625	2, 500
April, 1926.....	625	2, 500
May, 1926.....	1, 500	6, 000
June 1-11, inclusive, 1926.....	1, 000	4, 000
Sept. 16-30, inclusive, 1926.....	2, 500	9, 000
Total estimated travel.....	50, 407	225, 027

The actual count by type of travel is as follows :

	Total travel	
	Cars	People
Private cars:		
General.....	18, 236	66, 633
Camping.....	4, 683	16, 089
Repeaters.....	2, 352	5, 919
Rocky Mountain Parks Transportation Co. cars.....	2, 254	14, 556
Hotel cars.....	367	980
Rent cars.....	51	263
Trucks.....	1, 130	2, 239
Motor cycles.....	67	87
Horseback.....		2, 755
Pedestrians.....		1, 192
Total.....	29, 140	110, 713

The actual count by automobile entrance is as follows :

	Total travel	
	Cars	People
Fall River Road at Horseshoe Park.....	13, 299	51, 495
Highdrive at Deer Ridge.....	3, 470	15, 061
Bear Lake Road at Glacier Creek Camp Ground.....	4, 134	17, 119
Grand Lake entrance.....	8, 237	27, 038
Total.....	29, 140	110, 713

One-third of the private cars entering the park came from States other than Colorado. The proportion of visitors from outside of Colorado is even larger than this, since many Colorado cars carry passengers from other States, and the passengers carried by the Rocky Mountain Parks Transportation Co. are largely from other States.



The Fall River Road, which is the principal scenic road of the park and one of the highest roads in the country, crosses the Continental Divide and connects Estes Park with Grand Lake. About 32 miles of this road are within the park. The best method of approximating through travel over this road is to take the sum of the inbound and outbound travel past the Grand Lake entrance. The travel count at this entrance is as follows:

	Total travel	
	Cars	People
Grand Lake entrance, inbound travel.....	8,237	27,038
Grand Lake entrance, outbound travel.....	7,909	28,592
Total.....	16,146	55,630

The Grand Lake entrance is the only one whose location was not changed this year. The total travel count at that entrance is 41 per cent greater than last year.

The principal travel season in this park is from June 15 to October 1, but there are a few hotels in the immediate vicinity of the park that are open throughout the year, and the park itself is never closed except as weather conditions restrict its accessibility by automobile.

#### ROAD CONSTRUCTION AND MAINTENANCE

The Bureau of Public Roads, under an agreement with the National Park Service, has taken over the major road projects in this park. On June 10, 1926, a contract was let to Luke E. Smith & Co. for the construction of 1.8 miles of road on the Highdrive project. This project starts at Deer Ridge and runs in a northwesterly direction to a connection with the Fall River Road in Horseshoe Park. This project also includes a 24-foot, reinforced concrete, bridge with masonry facing, across Fall River. Work on this project is now in progress. Mr. William L. Lafferty is resident engineer on this construction. The Bureau of Public Roads is now preparing plans and estimates preliminary to advertising for bids on the Bear Lake Road project.

Maintenance work was performed on all roads in the park. The Fall River Road suffered from frequent rains during July and was muddy for about two weeks. Gravel surfacing was placed on the road near Grand Lake, reducing the previous trouble from mud on that portion of the road.

#### SURVEYS

The Bureau of Public Roads has a survey party in the field under the direction of Mr. S. A. Wallace, locating engineer. This party is now engaged in making a road location survey on Trail Ridge. Other surveys for proposed construction and reconstruction work will be undertaken as soon as practicable.

The work begun by the General Land Office a year ago on the resurvey of Tps. 4 and 5 N., R. 73 W., was continued during the past summer. This resurvey includes the official marking of all section corners that are located, and the reestablishment of all missing corners. This work will be continued until the survey of the park boundary and the dividing lines between Government lands and private lands has been completed.

#### TRAIL CONSTRUCTION

During the past year a new trail has been constructed to a point near Chasm Lake, whose elevation is more than 11,800 feet. The trail is three-fourths of a mile in length and is close to the upper limit of tree growth. This trail branches from the Longs Peak trail and permits parties on horseback to approach to within a quarter of a mile of Chasm Lake, which is one of the most stupendous views in the park. The summit of Longs Peak, which towers 2,500 feet above the lake, is less than three-fourths of a mile distant.

The Allens Park Chamber of Commerce recommended as the most desirable trail construction in Wild Basin, a connection between the trail to Pear Lake and the trail to Bluebird Lake. This trail is now nearing completion. It is approximately 3 miles in length and greatly increases the accessibility to Calypso Falls and Ouzel Falls. It also ties together two previously unconnected trails in the Wild Basin region and increases the flexibility of the trail system.

The partial reconstruction of the trail from the Pool to Fern Lake is now nearing completion. This trail has very heavy travel and is one of the most popular trails in the park.

The North Inlet Trail, in the Grand Lake district, was washed out by high water so as to be impassable for horses. The reconstruction of a portion of this trail is now in progress. This trail is the shortest transmountain trail between Estes Park and Grand Lake and has heavy travel.

The usual maintenance work was performed on other trails in the park.

#### CAMP-GROUND DEVELOPMENT

Development of the Aspenglen Camp Ground was continued during the year. The road system was completed and clearing was done for an additional number of camp sites. Three thousand five hundred feet of road is now in use on this camp ground.

The Pineledge Camp Ground was developed by the construction of a road system comprising 3,400 feet of road. Water-supply pipes were laid and sanitation temporarily provided for. The camp ground was put into use for the first time this season.

The development of Endovalley Camp Ground was carried on by the construction of additional roads. Water supply and sanitation remains to be provided for this camp ground before it can be put into service.

#### BUILDINGS

A three-room dwelling was constructed at the utility site. This is the second of a group of quarters that will be needed to house park employees.

A combination bunk and mess house and a shed-stable is under construction near Milner Pass to house a road crew that is needed for work on the road in that vicinity.

A masonry shelter cabin is under construction on the Boulder Field, at the end of the horse trail to Longs Peak. The building is at an elevation of 12,700 feet.

A masonry storm shelter is under construction at the Keyhole, on the Longs Peak Trail, at an elevation of 13,200 feet. This is the gift of Mr. F. O. Vaille, of Denver.

A small building was erected to house the portable fire pump at a location where it can furnish some fire protection to buildings of the utility group.

Temporary checking stations were constructed at Horseshoe Park and on the Bear Lake Road, on account of the change in park boundary. Temporary quarters were provided for the ranger stationed in Wild Basin.

The following improvements were made in buildings already constructed:

A portion of the main shop at Utility Camp was ceiled and partitioned off to provide working quarters that can be heated in cold weather.

The mess hall at Horseshoe Camp was partitioned in two equal parts and ceiled. This provides sleeping and boarding facilities for road men working in that vicinity.

A concrete frost-proof storage cellar was constructed at the storehouse on the utility site, to prevent injury and loss due to freezing of food supplies.

#### TELEPHONE LINES

An extension of the Wild Basin telephone line,  $1\frac{1}{2}$  miles in length, was constructed in order to connect with the ranger station in that locality. One line-man was employed throughout the summer keeping the Government telephone lines in operating condition.

## FISH PLANTING

The following fish, hatched by the State hatchery at Estes Park, were planted during the year in lakes and streams in the park, by the Estes Park Game and Fish Association, in cooperation with the National Park Service.

Location	Variety	Number
Glacier Creek, below Sprague's.....	Eastern Brook.....	100,000
Mill Creek, at Hallowell Park.....	do.....	40,000
Wind River, above Y. M. C. A.....	do.....	20,000
Longs Peak district.....	do.....	40,000
Moraine Park Pond.....	do.....	80,000
Hidden Valley Creek.....	do.....	80,000
Lake Mills.....	Rainbow.....	20,000
Total.....		380,000

## EDUCATIONAL WORK

Mr. P. A. Smoll served as park naturalist during the year. Up to September 1, he had conducted a total of 29 field trips, with a total attendance of 695 persons. He had also given 42 lectures, with a total attendance of 3,800 persons.

The educational work of this park is handicapped by the fact that there is no Government building in which the lectures can be given, or in which suitable exhibits can be placed on display. At present the only available space for such exhibits is in the administrative building, and educational work of this character does not fit in well with routine office and administrative work. Much better results would be accomplished if the educational work were housed in a building by itself. The Colorado Lions' Clubs have endorsed a proposal made by Mr. Smoll and have authorized the raising of \$10,000 for the purpose of such a building.

The check list of plants and birds of the park, by Dean Babcock, has been enlarged and reprinted. A series of colored oil photographs of the conifers of the park has been prepared, framed and placed on exhibition.

Members of the International Botanical Congress visited the park in September.

For the fourth consecutive season, a series of evening talks on natural history subjects, illustrated with lantern slides, has been given at the various hotels in and near the park. These lectures were supplemented with a field trip the following day. Several all-day nature study trips have been made to Fall River Pass. Those participating in this trip walked from Fall River Pass to Chasm Falls, and studied the natural history features of the park in the various life zones that are passed from above timberline to an elevation of about 2,000 feet below timberline.

Park visitors have shown an increased appreciation of the educational opportunities offered by the National Park Service, and in many cases have shown a desire for more accurate and complete knowledge with reference to natural history subjects.

## INFORMATION SERVICE

The information bureau in the administrative building continued to perform a useful function during the tourist season. Many thousands of park booklets, maps, folders, etc., were distributed and information was given to visitors on a large variety of subjects. Fifteen hundred persons registered at the information office.

The following Government publications relating to this and other national parks were sold during the year:

	Copies
Topographic Map of the Rocky Mountain National Park....	317
Toll's Mountaineering in the Rocky Mountain National Park..	57
Lee's Geological Story of the Rocky Mountain National Park..	154
National Parks Portfolio.....	8
Total.....	536

A few other publications relating to the park, but not issued by the Government, were kept on sale to supply the needs of visitors.



## HOTELS AND CAMPS

Ten new cottages were constructed at Grand Lake Lodge for the accommodation of guests, and a new hydroelectric plant, costing approximately \$25,000, was installed. These improvements added materially to the character of the service rendered the public by this hotel.

Forest Inn added to its capacity by a three-room guest cabin.

Bear Lake Lodge did an increased business due in part to heavier travel on the Bear Lake Road. The Bear Lake Trail School had an enrollment of 76 boys.

Fern Lodge was operated as usual.

Sprague's Hotel had a successful season.

In addition to the hotels and camps operated under Government franchise, there are more than 30 hotels and camps on private land, in and near the park, that have a combined capacity of about 4,000 guests.

## PARK INSPECTION

The work of this park was inspected during the past year by the following officials:

Dr. Hubert Work, Secretary of the Interior; Mr. John H. Edwards, Assistant Secretary of the Interior; Mr. Stephen T. Mather, Director of National Park Service; Mr. A. E. Demaray, Administrative Assistant to the Director; Mr. Horace M. Albright, Assistant Director, Field; Mr. Bert M. Burrell, acting chief civil engineer; Mr. Thos. E. Vint, associate landscape engineer; Mr. H. B. Hommon, sanitary engineer, Public Health Service, and also by several officials of the Bureau of Public Roads.

## ACCIDENTS AND DEATHS

On October 16, E. V. Apgar, an employee of this park, was sharpening a steel drill, when a splinter of steel struck his right eye, necessitating the removal of the injured eye.

On April 4, Ranger Moomaw found Charles Hupp, caretaker at Horseshoe Inn, dead in bed. Mr. Hupp had been in poor health for some time.

On July 23, Forrest Ketring of Denver, age 19, was killed by a fall while attempting to climb the precipitous east face of Longs Peak. Ketring fell about 800 feet.

On July 25 Fred N. Selak of Grand Lake disappeared from his cabin, which was found to have been ransacked. Two young men were arrested on suspicion, and several weeks afterward confessed that they had murdered Mr. Selak by hanging him to a tree, in the southwestern portion of the park. The two men are now being held by the State authorities, under a charge of murder.

## PURCHASE OF LAND

A 20-acre tract adjoining utility site was purchased from the Estes Park Development Co. The acquisition of this tract furnishes additional space for the erection of buildings, and for other needs.

## WILD ANIMALS

The number of the larger animals in the park is estimated as follows, although as there is no means of getting an exact count, the figures represent only a rough approximation: Deer, blacktail, 3,000; mountain sheep, 400; elk, 200; bears, black and brown, 35.

One herd of about 100 elk was seen last fall in Beaver Park, while one party reported seeing approximately 65 sheep on Specimen Mountain. The herd of mountain sheep often seen at the upper end of Moraine Park has been reduced in number, presumably from scab or some other disease. Bear have been seen on several occasions and are perhaps increasing slightly. The wild animals are apparently in good condition.

## FIRES

The park was fortunate in not having any destructive forest fires during the year. A ranger was stationed at the fire lookout on Twin Sisters Mountain

at an elevation of 11,436 feet, from June 15 to the close of the fire season in September. Several small fires, caused by cigarettes, camp fires, and lightning occurred, but in each case they were discovered promptly and extinguished before any extensive damage had occurred.

### WINTER SPORTS

The official State ski tournament was held at Estes Park February 7. The paid attendance at this tournament was 1,500 persons, and it is estimated that at least 1,500 more visitors were in the vicinity at the time.

The annual winter outing of the Colorado Mountain Club was held at Fern Lake February 19 to March 1. This outing was attended by approximately 70 persons.

### ARRESTS

On October 2, 1925, three men from Mount Carmel, Pa., were arrested by park rangers for killing a deer in the park. They were tried in the county court on the charge of hunting out of season without a license, and were given the choice of a fine of \$175 or 60 days in jail. They elected to pay the fine.

### CAMPING

There are four public camp grounds available to camping motorists on the east side of Rocky Mountain National Park. The Aspenglen Camp Ground is located adjacent to the Fall River Road, 4½ miles from Estes Park. Pineledge Camp Ground is located near the Highdrive, 2½ miles from Estes Park. The Glacier Creek Camp Ground is located on the Bear Lake Road, 6 miles from Estes Park. The Endovalley Camp Ground is located adjacent to the Fall River Road, 8½ miles from Estes Park.

During the year about 4,000 campers registered at the Aspenglen Camp Ground, and about 700 campers registered at the Glacier Creek Camp Ground. The campers came from 40 States and several foreign countries. No ranger was stationed at Pineledge Camp Ground or Endovalley Camp Ground, so that figures were not available from these points.

Rangers stationed at entrance gateways counted about 4,500 cars, containing 15,000 people, entering the various gateways of the park with camping equipment.

## HAWAII NATIONAL PARK

THOMAS BOLES, Superintendent, Volcano House, Hawaii

Mauna Loa Volcano became active in the park area near the summit about 3 a. m. April 10. The gigantic jets of steam illuminated by the molten lava below were magnificent during the hours just before dawn. The summit activity ceased within a few hours, and the molten lava reappeared through an earthquake crack in the southwest slope of the mountain many miles distant, coming out as a sluggish stream of red-hot clinkers, which within a few days ran for 15 miles down the lower slopes of the mountain and completely buried the little village of Hoopuloa, which had been abandoned by its residents a few hours before. Hoopuloa Bay was replaced by a peninsula of steaming slag and thousands of fish were killed by the boiling ocean. Thousands of visitors passed through the park to see where the county road had been covered by this lava.

Kilauea Volcano during the past season was a great disappointment to our average visitor, who possibly expected too much from this famous but fickle volcano. Comparatively few avalanches occurred during the year, and even the magnificent steam clouds of the previous season were lacking.

This park is rich in floral features. The road to the volcano winds through a jungle of gigantic ferns, many 40 feet high, with single fronds 25 feet long arching gracefully over the highway. "Kipuka Panula," a small oasis surrounded by ancient lava flows, contains nearly every type of native tree. Through the courtesy of Mr. Buster Brown this area has been fenced as a protection against stray livestock. Although no serious fires occurred, all vegetation suffered from the dry weather this season. Nearly 6,000 acres of near-by Territorial forest burned during the year, destroying considerable of the attractive forest bordering the highway leading to the park entrance.

## WEATHER

Although within the tropics, Kilauea's 4,000 elevation above the surrounding ocean provides an equable climate; the days averaging 70°, the nights 55°. June and December differ but a few degrees in their average temperatures. The absence of frequent rains during the past season has added greatly to the pleasure and comfort of the hiker and sightseer.

## FAUNA

Domestic goats which have gone wild and are considered a local pest rather than an attraction, are the principal mammals in the park. The little native red birds are becoming quite plentiful, and in this connection the following quotation from a letter from Dr. J. M. Johnson of New York City, a naturalist and student of bird life for over 40 years, will be interesting: "With the exception of birds which nest in colonies, I have never seen so many resident birds of a single species as occur near the Volcano House along the edge of Kilauea Crater in the Hawaii National Park. During the daylight hours their songs are never stilled, and little groups or single individuals were seen constantly flying from place to place."

## FISHING

Although there are no springs or streams in the Hawaii National Park, it has 7 miles of ocean front suitable for fishing. It is worthy of note in this report that a near-by Japanese fisherman caught during the season in this body of water, with hook and line, a swordfish weighing 1,053 pounds and measuring 25 feet long. Frequently swordfish are caught here that weigh as much as 300 to 500 pounds, but this probably establishes a world's record, especially for hook and line.

## GENERAL DEVELOPMENT

The Kilauea area being the objective of nearly all park visitors, our small appropriation was devoted to improving and protecting this area. All roads, trails, and structures are in good shape, and all points of interest properly signed.

## STRUCTURAL IMPROVEMENTS

The superintendent's residence, equipped with electric lights and hot and cold water system, was built in a commanding position on the cliff surrounding Kilauea Crater. The fireplace is built of lava and a rock hurled from the volcano during the 1924 eruption was used as the cornerstone. In order that the public might enjoy the magnificent view from this house site, "welcome" signs have been placed at the ends of the trail surrounding the building grounds. In the design and location of this building, many helpful suggestions were received from Mr. Cammerer during his visit.

A ranger cottage, also equipped with tank and water system, was built convenient to the administration area. Improvements were made to the superintendent's office, and an additional room added to the paint shop.

## NEW TRAILS

In addition to improving the existing trails, a new route to the floor of Kilauea Crater was built, known as the "Sandalwood Trail" which is rapidly becoming quite popular. Another trail completely equipped with sturdy rustic railings was built along the rim of the cliff at the superintendent's residence. A short cut crossing a large earthquake crack, was built across a loop in the road to the volcano, and affords an excellent view from above of the Fern Jungle.

## KILAUEA MILITARY CAMP

Kilauea Military Camp has continued with marked success; and notwithstanding the construction of several new buildings, has been crowded to capacity several times during the season. The hearty cooperation of Capt. Everett Busch, commanding this camp during the past season, has greatly simplified the park administration, and has been the means of considerable saving to our appropriation through his coordination of equipment at no extra expense to his own funds.



### NAVY RECREATION CAMP

Two large buildings, with several sheds and water tanks were built during the season by the Navy Department on the 14 acres subleased from the military camp trustees. Funds are now available for additional improvements. Only 400 visitors to this camp this year, but this number should be tripled during the coming season. The camp commander, Lieut. Howard Enyart, of the Marines, has at all times worked very closely with the park service, and his valued cooperation is appreciated. Assistant Secretary of the Navy Robinson was enthusiastic over this camp at the time of his visit during the season.

### VOLCANO OBSERVATORY

This scientific institution supported by the Geological Survey of the Interior Department, with some outside aid, continued its work of observing and recording the various phases of the volcanoes Kilauea and Mauna Loa. Drillings for ascertaining temperatures on the floor of Kilauea Crater were made during the past season.

### HOTEL ACCOMMODATIONS

Kilauea Volcano House, starting on its present site in 1865 as a grass hut, has developed into a modern hotel with 120 rooms, including several cottages, and has been filled to capacity at several times during the past year. Exaggerated reports about water shortage has kept many persons away from this hotel during the season. On July 1, 1926, the hotel lease was extended for a period of 20 years.

### SUMMER CAMP

Realizing the local demand for a public summer camp, the park service has included in the lease above mentioned, an obligation to establish a cottage type of summer camp similar in operation to the military camp, but open to the public. Actual construction is deferred until the park service landscape engineer can make personal inspection of local conditions, and give his advice as to the type of buildings most suitable for this camp.

### CAMP GROUNDS

Our camp ground at the beginning of Cockett Trail has been improved by the construction of a rain shed and additional water tank and cooking grates. Similar buildings, with toilets, have been built in the bird park section.

### ROAD CONSTRUCTION

Highway Engineer Kittredge with his Assistant McCracken arrived in July, and at once began surveys for our several park road projects, and by December had completed all field work. It has been thought advisable to design these roads on Bureau of Public Road standards, rather than standards used heretofore by the National Park Service. Only the Chain-of-Craters Road is considered an immediate project, and although no actual construction except the clearing and grubbing done by park employees during the latter part of the season was performed, still by the end of the year bids were received and opened, well within the estimated costs, covering the grading and surfacing of this most essential project. Actual construction will begin as soon as some right-of-way details are cleared up. It is well to mention in this report that the county of Hawaii has authorized surveys of a county road which will be an extension of our Chain-of-Craters Road on down to the tropical Kalapana coast and its cocoanut groves.

The bureau forces completed surveys of a road to the summit of Mauna Loa Volcano; also to the summit of Halealaka Crater; and also surveys for the revision of existing park highways, in order to bring them to higher standards.

### TRAVEL DURING 1926

Travel to the Hawaiian Islands continued to increase, not only from the rest of the United States but also from other nations. Ships from San Francisco and Los Angeles are frequently loaded to capacity. The concrete high-

way tributary to the park is now within 5 miles of our entrance and will reach us within the coming year. Travel to the park is fairly well distributed throughout the year, enabling the Department of the Interior to administer this park at comparatively small expense per visitor.

Excellent publicity has been obtained for the park during the past season not only from our visitors but also from the hearty cooperation of the Honolulu, Hilo, and Maui newspapers, and also by the attractive presentations through the "Paradise of the Pacific."

The Territory of Hawaii, through the Hawaii Tourist Bureau, is spending \$100,000 per year advertising the islands in high-class magazines, always making liberal mention of the Hawaii National Park and its features. They have continued the publication and distribution of our park folder, with text and cuts up to date.

Several United States battleships stopped at Hilo long enough to permit their men to visit the park. The Navy transport *Chaumont*, returning from Manila, also stopped to permit a large congressional party to visit the volcano for a few hours. All seemed well pleased with their visit.

### LASSEN VOLCANIC NATIONAL PARK

L. W. COLLINS, Acting Superintendent, Mineral, Calif.

Due to present insufficient means of communication with outside points, summer headquarters for Lassen Volcanic National Park are maintained at Mineral, 9 miles distant from the park on the Red Bluff-Susanville Highway, where mail, freight, and telephone service are at hand. Winter headquarters are at Red Bluff, as present conditions forbid yearly occupation at Mineral.

An acting superintendent in charge of all business and operations was the only permanent employee during the year. He was assisted during the field season by two temporary rangers who acted as his agents in patrolling the park, enforcing various regulations, gathering statistics, and assisting on improvement projects. Prior to this year there had not been activity enough to warrant the assistance of office help or the construction of a regulation summer administrative office. However, this season marks a considerable development in the park itself, and the corresponding business attendant to this development and that of the future demands a permanent headquarters and a greater organization from now on.

### PRINCIPAL ACTIVITIES

**Road construction.**—The most important activity seen this year has been the work done on the park highway—the stretch of road that will eventually connect the various points of particular interest.

The total length of the survey is 20 miles, of which  $6\frac{1}{2}$  have already been completed at an expense of \$110,000. The total allotment to extend over the three-year road-building program is \$340,000. This money was tentatively allotted at a time when the major road projects were still handled by the park service, while actual work on the highway was started after the road work was turned over to the Bureau of Public Roads. Owing to the nature of the country this highway will cost more per mile as the work progresses, and to complete it under Bureau of Public Roads standards will necessitate an additional appropriation.

**Trails.**—The construction of new trails would not seem practical until the highway is completed and camp-ground sites have been selected. They should branch off this new highway toward places the visitor could not reach by car alone. At present there are a few old trails that fortunately pass through the park near places the tourist desires to see; these have been improved this year and spurs run out from them here and there until there are temporary trails that will serve the public until the highway is finished.

**Ranger stations.**—Summitt Lake Ranger station is now complete and in service. This station is on the line of the new highway, near the park boundary and will be utilized as a checking station and storage depot for equipment needed on the north side. Another station at the Warner Valley entrance to the park, on the southeast side, is under construction and will be completed this season. These two stations will be bases for patrol work and should prove adequate for activities in the north, east, and southeast sections

*Telephone construction.*—Twelve miles of telephone line were constructed between Brokeoff Mountain and Summitt Lake. This line taps the Mineral-Brokeoff line maintained by the Forest Service and so connects Summitt Lake with Mineral headquarters.

*Geological Survey work.*—The expedition headed by Mr. Davis has completed survey work started last year. An accurate map showing elevations and contours will soon be available. A resident geologist and volcanologist has established headquarters at Mineral for the purpose of recording the earth tremors that frequently occur in this vicinity and studying the volcano itself.

*Visitors.*—The present lack of suitable accommodations has been a bar to a large per cent of the people who would have liked to visit it; however, park records show a 48 per cent increase this season over last year. A total of 5,423 cars and 18,739 people came in this year as compared to 2,646 cars with 12,596 people for last. Practically all these people came in private autos as there are no bus lines or railroads. California has more parks than any other State and therefore more visitors. All of the other parks are within easy reach of each other by beautiful State highways and many people visit one after another. Whenever camp grounds, roads, and trails are developed so that Lassen is readily accessible, it will immediately become a member of this connected series and draw additional visitors, with a resultant increase in revenue.

*Wild life.*—It has been very gratifying to note that the park animals, as a result of the protection afforded them, are much tamer, and are on the increase. Owing to the high elevation, intense cold, and lack of food during the winter it is impossible for game to stay within the boundaries all year. Cooperation with State fish and game officials, Forest Service officials, and private summer resort owners, as well as patrol work by rangers, has diminished shooting almost entirely. It is difficult in a short time to close an area that has for years been considered a favorite hunting ground, as the northeast and eastern sides have been; yet posting of the boundary and association of rangers with people themselves has practically done this already. The majority of visitors have left this park enthusiastic subscribers to all its regulations. There are numbers of mule and black tail deer, probably a hundred black and brown bear, and a host of quail, grouse, and smaller animals; there are also a number of coyotes and about five panthers.

Many of the small lakes existing in the park contain fish. This year 100,000 trout fry were planted in these various lakes, and if they seem to flourish the park will receive as many or more each year from the State hatchery at Domingo Springs.

#### COOPERATION BETWEEN PARK AND FOREST SERVICE

Cooperation between the park and Forest Service officials has been one of mutual benefit and satisfaction this year.

In the spring the park obtained possession of equipment and supplies that were necessary to the improvements contemplated for the coming field season, but with no proper headquarters or storehouse in which to house it. The Forest Service was appealed to and the use of a storehouse and dwelling was secured; also permission to erect a tent office and garage was granted. All this on condition that the park service assist with what help they could muster in the event of forest fire.

The Forest Service also donated some of the wire used in the construction of the Brokeoff-Summitt Lake telephone line. Forest rangers have acted as information agents and have augmented in many ways the park ranger force. They maintain two lookouts within the park, one on Brokeoff Mountain and one on Prospect Peak; this is advantageous as between the two visibility of areas in which fire is likely to occur is complete. In return the park has helped in fire suppression work on fires adjacent to the park (some of the most disastrous fires in the history of this particular country have occurred this season) and in this connection at times has allowed Forest Service officials the use of one small truck, which was a valuable service as they have none of their own on the Mineral district.

This has been a splendid example of harmonious cooperation, yet it must be realized that the park, developing as it is, needs permanent headquarters, telephone and mail service, storehouse, etc., of its own within or near the boundary, to facilitate activities by the superintendent.



## MOUNT MCKINLEY NATIONAL PARK

HENRY P. KARSTENS, Superintendent, McKinley Park, Alaska

New park headquarters, established last year 2 miles from McKinley Park station on the park road, are gradually developing. Considerable land was cleared and several new buildings constructed by the park forces during the year. An office building and chief ranger's quarters were built and considerable finishing-up work done on the superintendent's and clerk's quarters. A ranger station was also constructed on Stony River by the rangers, to shelter them while on patrol. The park dog-teams are now being summered at headquarters and are a never-failing interest to the visitor.

## ROADS WITHIN PARK

Road construction in the park is being done by the Alaska Road Commission. At the opening of the season 14 miles of road were open to traffic. By June 30, 6½ additional miles were open, allowing auto transportation to Savage Camp and the divide between Savage and Sanctuary Rivers. The bridge over the Sanctuary River was also completed. In all, 22 miles of road have been graded, 1½ miles of which are not yet open to traffic.

*Trails.*—A crude road was built by the park forces from Savage Camp to the rest tent near the headwaters of Savage River, a distance of 8 miles, over which light autos and horse-stages operate, opening up an interesting scenic and game section of the park. No work has been done on other trails this season.

## DESTRUCTION OF WILD LIFE

The wild animals in the eastern portion of the park are responding very satisfactorily to the protection offered them. During the early portion of the summer mountain sheep were often on the park road and were approached to within a few feet in autos. Later most of them migrated to the headwaters of the Savage River where the visitors who took this trip were rewarded by seeing large numbers of them, as well as caribou and grizzly bears.

Among the fur-bearing animals, the fox predominates and are frequently seen close to Savage Camp. Though the wild animals are becoming plentiful and tame in the eastern portion of the park, the central and western portions are scenes of considerable slaughter of both sheep and caribou. Last fall another large killing of sheep was made by hunters on the lower Toklat River. This occurred while the rangers were freighting in their supplies and they arrived on the scene a few days too late.

This spring, a bone fide prospector was apprehended with 22 quarters of caribou in his possession and three carcasses on the river bar a short distance from his cabin. Much more evidence of the killing of park game was found but the force of three rangers is too small to cope with the situation.

## PUBLIC UTILITIES

The reorganization of the Park Transportation Co. has resulted in a considerable amount of improvement in transportation and extension and betterment of camps. Eight touring cars have been operating between the railroad and Savage River Camp (12 miles) giving an efficient and comfortable service.

*Savage River Camp.*—The tent-house camp at Savage River has been enlarged and improvements made. Fifty-two visitors can be comfortably accommodated and 60 people can be served in the large neat dining-hall, where excellent meals are served. A social hall with an exceedingly fine dancing floor is available for the comfort and entertainment of the visitor. Corrals, barns, and garage are near by. At this camp 30 saddle and pack horses are maintained for the use of those wishing to penetrate into the more distant portions of the park. Four comfortable tent-house camps have been erected, extending from Savage Camp to Copper Mountain, a distance of 60 miles. From this point a beautiful close-up view of Mount McKinley and the ice-covered range may be had. Interest along the way is stimulated by the ever-changing scenery and the numerous herds and bands of wild animals.

The flora of the park has not yet been classified but the great variety of flowers, ferns, mosses, etc., would gladden the heart of those interested. The

side trip from Savage Camp to the headwaters of Savage River is a very popular one and enjoyed by all who have taken it, as it is noted for its game and scenery.

#### TRAVEL

The travel into the park has shown a decided increase each year, the present year being no exception. A total of 533 visitors was recorded, as against 206 in 1925. At times it has strained the transportation company to the limit to care for the visitors and it has been necessary to refuse some when accommodations were not available at Savage Camp. The side trip to the headwaters of Savage River, among the higher mountains and game, was very popular and enjoyed by all who made it. Many expressed the opinion that this trip was most interesting since their arrival in Alaska. Bear, sheep, and caribou being very much in evidence in that section during the summer.

Among those who visited the park was Prof. Joseph Dixon and George Wright, of the University of California, who spent several months in the park studying its animal and bird life. Many interesting discoveries were made among which was a surf bird's nest and eggs. Professor Dixon reports McKinley Park as the most interesting field he has ever visited by reason of its exceedingly large variety of wild life.

Seven conducted parties entered the park: 1 "Reedy" of Texas, 3 "Griswell" parties, 1 "Cook" party, 1 "Beard" party and the Prairie Club of Chicago, ranging from 7 to 45 persons in each party. Visitors entering the park represented 28 States including South Africa and Hawaiian Islands. In all cases, the one regret of our visitors is the lack of roads to the more distant and interesting portions of the park.

#### FOREST FIRES

There has been no forest fires in the park, though large conflagrations were raging to the south during the spring.

#### TELEPHONE SYSTEM

During the spring all lines were put in shape by the ranger force and have been operating 100 per cent during the summer. During July messages aggregating approximately \$125 were delivered to the railroad.

#### WEATHER

Although the general atmosphere conditions were more favorable this year than last, a greater precipitation was recorded; 1925 being 7.44 inches while 1926 showed 31.16 inches. This increased rainfall had a great tendency to retard tourist travel.

#### MINING AND PROSPECTING

The bill creating the park carried an item allowing prospecting within its boundaries. Though considerable prospecting has been done in the past, no mineral leads of importance have been found aside from a silver-lead lode at Copper Mountain, which is of unknown value. All prospecting operations have been abandoned in the eastern portion of the park.

### GRAND CANYON NATIONAL PARK

J. R. EAKIN, Superintendent, Grand Canyon, Ariz.

The total of 140,252 visitors during the season just past, was the largest number ever to enter the park in a single year. Although the increase was not very large, it was very gratifying considering general travel conditions. Heavy spring and early summer rains caused a drop in auto travel during the fore part of the season, while an entire lack of large conventions on the Pacific coast caused rail travel to fall below the high level it was expected to attain.

Travel to the north rim showed a very substantial increase. Travel by regular stage lines from the end of the rails in southern Utah more than doubled. There can be no doubt that this region is one of the great attractions of America.

In considering the claim of the Grand Canyon as being an all-year National Park, it is interesting to note that at least one auto has been registered every day since February 22, 1925.

Travel to Grand Canyon National Park for the travel season ended September 30, 1926, was as follows:

By automobile				By rail		Miscellaneous		Total
South rim		North rim		South rim	North rim	South rim	North rim	
Cars	Passengers	Cars	Passengers					
20, 066	63, 631	2, 783	8, 949	65, 501	1, 935	90	146	140, 252

*Revenues from permits, contracts, etc.*

Permits for studio, curio shop, grazing, etc----- <sup>1</sup>\$200.00  
 Contracts for hotels, camps, transportation, general store----- 15, 605.45

#### WEATHER

The Grand Canyon possesses an ideal year-round climate. Contrary to popular opinion, the weather on the rim during the summer is cool and pleasant, while the winters are not in the least severe. The altitude of 7,000 feet, together with Arizona's low humidity and bright sunshine, makes an ideal combination from the weather standpoint.

The highest temperature during the year was 94 above on July 12, and the lowest 1 below on January 21. Snowfall was far below normal and precipitation about the usual amount.

#### ACCOMMODATIONS AND FACILITIES FOR VISITORS

On the south rim and in the canyon, tourists are accommodated at hotels and camps operated by Fred Harvey. El Tovar Hotel and Bright Angel cottages on the south rim gave excellent service to visitors, and those taking overnight trips into the canyon found Hermit Creek cabins and Phantom Ranch up to the standard set by the Harvey Co.

On the north rim the Wylie Way camp, operated by Mrs. Elizabeth McKee, provided excellent accommodations for visitors.

#### ROADS

Chuck holes were patched on the paved road to Hermits Rest and shoulders were repaired over a short stretch. This road has been paved for 15 years and due to poor rock used in its construction is going to pieces very fast. This road should be resurfaced next year if possible; certainly it will not stand up for a much longer period.

Dirt roads to Grand View and Desert View and that part of south entrance road within the park were maintained as well as weather conditions permitted.

Six miles of new Desert View Road were completed last November and an additional 6 miles of this road cleared in the winter. The Grand View-Desert View section can not be constructed until there is a slight revision of park boundaries immediately south of Buggeln's ranch.

That part of the south entrance road within the park was cleared, and clearing has been completed on 3,600 feet of Bass Camp Road to a point opposite sewerage purification plant and incinerator.

Service roads to new camp ground, to sewerage purification plant and incinerator, and to barn at head of Yaki Point section of Kaibab Trail were constructed.

The Grand Canyon Copper Co. fenced its property on Grand View Point and it was necessary to build a loop just south of the fence.

The Bureau of Public Roads completed the following surveys on the north rim: Final location Cape Royal Road, final location of road from Neale Spring to Point Imperial, and reconnaissance of Point Sublime.

<sup>1</sup> Grazing fees stettered, authority of Secretary of Interior.



Due to delay in making definite allotments from road budget for road construction, contract has not yet been let for any projects and much valuable time is being lost.

#### TRAILS

A very heavy storm in August washed the Hermit Trail very badly for a distance of about 1 mile. With this exception the season was remarkably free from washouts and no difficulty was experienced in maintaining all trails to a high standard.

The Tip-off section of the Kaibab Trail was completed in April, as was the Granite Gorge section. This winter the remainder of the Kaibab Trail will be reconstructed from the head of Granite Gorge to as near the north rim as snow conditions will permit.

Construction of water development on the Tip-off section is progressing satisfactorily. Unusual delay in this project was caused by late deliveries of materials.

The trail across Muav Saddle to Powell Plateau was completed early in September. This trail will greatly facilitate fighting forest fires on Powell Plateau, which is especially susceptible to electrical storms. Trail workers developed a fine spring in Muav Saddle and a snowshoe cabin was built near by.

Satisfactory progress is being made in the construction of Hopi Point footpath.

#### COMPREHENSIVE SEWAGE DISPOSAL PLANT

Laundry waste was turned into the new sewer on March 23. The sewage treatment plant was put in operation May 29. The operation of this plant is an unqualified success. The reclaimed effluent is free of bacillus coli and is used for generating steam, irrigation, operation of public flush toilets, etc. Due to a cooperative arrangement with the Harvey Co., 10 per cent of reclaimed water is given to the park service free of charge, which makes it possible to install flush toilets on new auto camp grounds. As all water used at the Canyon is hauled from Flagstaff in tank cars and is very expensive, the benefit from this arrangement is apparent.

#### GARBAGE INCINERATOR

The incinerator built by the operators was placed in operation August 21. Grate bars are made of water pipe and steam thus generates, thoroughly cleansing garbage cans. A can-mashing machine was also installed. Through a cooperative arrangement, garbage and cans produced in park service areas are disposed of at this plant. It can now be definitely stated that sanitation at Grand Canyon National Park is at least equal to other national parks.

#### ELECTRIC INSTALLATION

The new power house recently completed by the utilities develops alternate current instead of direct current as developed by the old plant. A modern hook-up with the new power house was designed by Chief Electrician Emmert of Yosemite National Park and the installation was made by Mr. Emmert's assistant, Mr. Jenkins. A high tension underground cable was laid from the new power house to the center of park activities. Our line loss is now 27 cents per day instead of \$4 per day as formerly. We are furnished current from the new power house at one-fifth the rate paid for current from the old power house.

#### TELEPHONE LINES

All telephone lines were adequately maintained. The line to Desert View was completed last winter. A telephone line was built this fall from Pasture Wash Ranger station to Signal Hill near Bass Camp. A fire lookout was established at Signal Hill and gives observation on Powell Plateau and Swamp Point ridge, areas where the greatest fire hazards exist.

#### BUILDINGS

On the north rim a ranger cabin was built on Bright Angel Point and snowshoe cabins were built at Muav Saddle, Kanabonitz Spring, and Green-

land Seep. These buildings were authorized for fiscal year 1926 and due to unusual delay of materials were built by contract. Of the buildings authorized for fiscal year 1927, warehouse, duplex cottages and powder magazine have been completed. Trail maintenance cabins at the Tip-off and Emmet Creeks, and ranger cabin and combination barn and warehouse at Cottonwood Flats, will be constructed this winter.

A mule shed and machine storage shed were built in our industrial area at administrative headquarters.

#### MISCELLANEOUS CONSTRUCTION

Excellent progress is being made on water development at Bright Angel Point. The drift fence around Grand Canyon Village area was practically rebuilt.

#### PUBLIC CAMP GROUNDS

Four public camp grounds were maintained during the year, but the one at headquarters was patronized more than the other three, located at Grand View and Desert View on the south rim and Bright Angel Point on the north rim. All camp grounds were kept in clean and sanitary condition and free water and firewood was furnished. A total of 31,365 people in 11,330 autos used the camp grounds.

It was hoped new camp ground at headquarters would be ready for use about midsummer, but access to these grounds hinged upon the removal of certain buildings, etc. by the operators. On July 1 the Harvey Co. began the erection of camp lodge and delicatessen and 20 housekeeping cottages. As this unit will not be completed until late fall it appeared best to defer use of new camp ground until next spring. While this delay is regretted it is believed that visitors will be amply repaid, owing to additional comforts installed.

A standard comfort station with flush toilets and sewer lines has been installed. Service road to camp ground has been completed and camp ground cleaned of rocks. Water lines, one for reclaimed effluent for flush toilets and one for pure water for domestic use, will be laid this fall. It is believed new camp grounds will be at least equal to those of other national parks. The camp lodge, delicatessen, and housekeeping cottages will set a standard in the park system.

#### NEW FACILITIES FOR VISITORS

In order to operate the Yaki Point section of the Kaibab Trail, the Fred Harvey Co. has constructed a large barn and guide's house near the head of the trail. Landscape principles have been followed in the design of buildings and their location.

The Fred Harvey Co. is building a camp lodge and delicatessen and 20 housekeeping cottages on the new auto camp ground. Buildings will be ready for use late this fall, but probably will not be placed in operation until next spring.

A new wye was constructed by the Santa Fe Railway in order to give adequate storage, and the old wye was removed. A new power house was constructed by the utilities on a site designated in our general plan and the old power house razed. The design of the new power house has caused much favorable comment.

Babbitt Bros. moved into their new store building located on community center as designated in the general plan. The building is of pleasing design, with adequate provision for serving the public.

Wylie Camp on the north rim was enlarged and an electric-lighting plant installed. There are now accommodations for approximately 100 guests. The increasing popularity of the north rim kept this camp filled to capacity for a considerable period.

#### RECREATION FIELD

Considerable work was done by donated labor and from funds donated by local organizations, the Santa Fe Railway, and the Harvey Co. A grand stand was erected and a race track built. We now have a recreation field of which the community may well be proud.

## INSECT INFESTATION ON NORTH RIM

The Black Hills beetle, whose inroads in the Kaibab Forest and adjacent lands of the park have occasioned considerable alarm, appears to have been successfully combated by park service crews under the supervision of the Bureau of Entomology. No new infestations were in evidence this year.

## MINING PROPERTY ELIMINATED

The Bass mining claims were acquired by the Santa Fe Development Co., a subsidiary of the Santa Fe Railroad. It is understood these claims will be donated to the Government.

## REVISION OF PARK BOUNDARIES

It is regretted that the bill for revision of boundaries as recommended by the coordinating commission did not pass at the last session of Congress. Until this bill becomes a law it will be impossible to build a road to Desert View and Cape Solitude on the south rim and Point Sublime and perhaps Cape Royal on the north rim. The proposed addition to the north rim would preserve a representative section of the Kaibab Forest in its natural state and furnish a sanctuary for wild life with both summer and winter range for deer.

## FISH CULTURE

Rainbow trout are now fairly well established in Bright Angel Creek. These trout are only found in the upper stretches of the creek which is fed by springs. An effort is being made to find a species of trout which will thrive in the lower and warmer waters.

On December 13 and 14, 25,600 eyed eggs of Loch Leven trout were planted in Bright Angel Creek. This was following up the plant made a year before. The eggs were received from the United States Bureau of Fisheries at Saratoga, Wyo.

As we are experimenting in planting operations, we have not requested the shipment of other kinds of fish, as this might cause some complications.

## WILD LIFE

Wild life of all kinds has shown a splendid increase. On the south rim deer are seen much more frequently than was the case a year ago. Signs show that they now range close to the village, and sometimes even wander among the buildings. There are several reports of more than 10 being seen in one band.

There was no evidence of starvation among the deer on the north rim. Even during the early spring months those seen around Bright Angel Point were in a very satisfactory condition.

Mountain sheep are steadily increasing. During the month of January 17 trail parties saw specimens of this interesting animal in the canyon.

The 12 antelope which were placed on the Tonto Plateau have had a rather bad time. Only during three months of the year were they able to subsist on natural forage. At present there are 10 in the band, 3 does, 4 bucks, and 3 fawns which were born this spring.

Predatory animals were not very numerous and only about 20 coyotes were destroyed.

Hunts made during the year brought the total number of wild burros destroyed on the Tonto Plateau to 638.

## FOREST FIRES

There were a total of 11 forest fires on the park. The largest of these burned over about 20 acres. One man on Hopi Tower kept a constant lookout during the dangerous fire season which we have just had. The prompt location of all fires on the park no doubt explains the small areas burned over.

On June 21, the tent used as a checking station on the south rim was destroyed by fire, and on June 10 the large woodpile behind the Hopi House was destroyed. Both of these caused a small amount of damage to trees near by.

All of the forest fires were started by lightning except one. This was caused by a careless camper who was afterward apprehended.



## EDUCATIONAL WORK

During the past year one ranger has been acting as ranger naturalist. He has collected a great deal of interesting material in and around the canyon. He also found eight species of invertebrate fossils which had never been found here before.

Other activities consisted of the monthly issue of nature notes, camp-fire lectures, and a daily nature guide walk along the rim.

Dr. C. W. Gilmore of the Smithsonian Institute and Dr. David White of the United States Geological Survey spent several weeks in the park making special investigations.

Our work the past year was carried on with our regular force and as a result was not very extensive. However, what little we have done has made a very favorable impression, and has given us a basis on which to work in the future.

## LAFAYETTE NATIONAL PARK

GEORGE B. DORR, Superintendent, Bar Harbor, Me.

The past year was one of great development for Maine as a recreational State, and Lafayette National Park has been given full recognition as the culmination of its coastal scenery and recreational opportunities. Extensive work of permanent character is being done on the State highways leading to the park. The work on these has temporarily impeded travel but when finished will result in a great increase.

In spite of this the park has experienced a marked increase in travel, which came to it from all sections of the country.

The recreational use of the sea has increased enormously within the last few years and this year more than ever. Fleets of sailing crafts are a beautiful sight on the ocean bays bordering the park on every pleasant day, and races are held twice a week. Power boats are constantly increasing in number and speed and for these the islanded and sheltered waters that surround the park on all but its ocean front and stretch away westward for 40 miles offer wonderful opportunity.

## ROAD WORK

The park motor road connecting the Bar Harbor region with Jordan Pond and the resorts upon the ocean front—a 5-mile stretch—is now completed in all but its final surfacing, which will be given it later this fall and in the spring. The road rising from this to ascend Cadillac Mountain has been built, though not surfaced, for three-fifths of a mile, halting at a point where there is a view of unsurpassed beauty eastward over Frenchman's Bay.

The driving and horseback road system in the park, still under construction, has advanced rapidly and when completed will be unique in variety, magnificence, and range of scenery.

## NATURAL HISTORY

The study of the natural history of the park has progressed far during the past year. Dr. E. T. Wherry, president of the Washington Wild Flower Society, visiting the park for the fourth consecutive season, has compiled a list of several hundreds of the most interesting wild flowers, ferns, and other plants of Mount Desert Island with descriptive text which now only awaits funds for publication. This will be of great value to park visitors and to naturalists.

This year, for the first time, the Massachusetts Audubon Society visited the park, a party of 26 spending two weeks in early July at the Appalachian Mountain Club camp on Echo Lake and studying the birds upon the island. They went off enthusiastic at what they found and the beauty of the park and plan to return next year, making their visit to the park an annual event.

Dr. Charles W. Johnson, the entomologist, who has been studying the insect life of the park during the last half dozen years, returned again this year and has now compiled a list of nearly 3,000 species of insects which also, with text to accompany it, awaits funds for publication.

Prof. Douglas Johnson, of Columbia University, who visited the superintendent three years ago seeking material for his then forthcoming book on the

Acadian-New England coast line, arranged this summer for an intimate geological study of the park and island by Prof. Ervin J. Raisz, of Columbia, who stayed with the superintendent for six weeks and has brought to light new features of the ancient story. His report will be printed later for the use of visitors.

#### FOREST FIRES

The present season has been singularly free from forest fires within or bordering the park whose forests protected from ax and fire, are growing rapidly, and make magnificent shelter for wild life.

#### PUBLICITY

The park has received conspicuous publicity during the past year, numerous articles being written on it and published in various leading papers and magazines.

#### TRAVEL

Travel to the park to September 30, 1926, has shown a gratifying increase over any previous year, the total reaching 101,256, an increase of 27,583 over the number recorded on September 30, 1925. Records show that every State and several foreign countries are represented by visitors.

### ZION NATIONAL PARK

RICHARD T. EVANS, Acting Superintendent, Springdale, Utah

#### PARK TRAVEL

National interest in Zion National Park was attested by the registration of 21,964 visitors, an increase of 5,147, or 30.6 per cent over last year, a good showing for the second year of encouraged travel. They came from every State in the Union and from many foreign countries. The most celebrated visitors were the Crown Prince and Princess of Sweden who, with their distinguished party, spent two days in open admiration of the unsurpassed scenery.

It is worthy of note that several of last years' visitors from far distant States came again to the park.

The travel for the year ending September 30 was divided as follows:

Number of auto- mobiles	Visitors		
	By private auto- mobile	By stage and mis- cellaneous	Total
4,796	18,923	3,041	21,964

The well-kept and comfortable free camp grounds were ample to accommodate 3,339 motor cars and 10,381 motorists during the year.

#### ACCOMMODATIONS AND FACILITIES FOR VISITORS

In preparation for the increased travel the Utah Parks Co. during the early spring erected 15 new cottages and a comfort station and practically rebuilt the lodge, doubling the size of the kitchen and dining room and adding two wings—one to contain a recreation hall, the other a curio shop and store. Besides adding to the comfort of the guests this effected a distinct improvement in the artistic appearance of the building. It is hoped that by next season suitable dormitories for the company's employees will be erected as the present quarters in the old Wiley camp are too dilapidated to be much longer used.

Some young trees and grass seed were planted last spring, but more attention should be given to the development of many dense grass plots, for they tend to moderate the heat that prevails during the summer afternoons.

At the company's utility site, to supersede the inadequate two-unit Delco plant, a power plant was installed which early in July began to generate electricity for lights, fans, the refrigeration of a ton of ice daily, and the operation of a moving-picture projector in the recreation hall. The garages and cottages for two mechanics were completed but not in time to be of service.

The increased travel enabled the Utah & Grand Canyon Transportation Co. to maintain a daily bus service to the north rim of Grand Canyon.

#### SANITATION

Additional measures were taken to prevent the pollution of the Virgin River by sewage seepage by the construction of two new filtration trenches at the plant of the Utah Parks Co. and one at the public camp grounds. The situation was materially improved during the winter when the town of Rockville abandoned the use of the river water and constructed a pipe line to a spring. Grafton, a village of seven families, 3 miles farther down the river, and Virgin, a village of 37 families, 5 miles below Grafton, are on the point of following Rockville's example.

At the suggestion of Sanitary Engineer H. B. Hommon cooperation was established between the park service, the Utah Parks Co., and the State Board of Health by the collection of samples of sewage effluent and Virgin River water at frequent intervals for analysis.

#### TELEPHONES

Modern telephone service was established on July 20, when the private line of the Utah Parks Co. from Cedar City and the commercial line of the Southern Utah Telephone Co. from St. George were brought to the lodge. The entrance of the latter company was effected by their purchase on June 10 of the rights and good will of the original pioneer permittee, John A. Winder.

Both lines consist of a two-wire copper metallic circuit and are strung on one set of poles.

#### ROADS

The highway of  $7\frac{1}{2}$  miles within the park and the trails were maintained in excellent condition throughout a rather dry year. The cloudburst of July 28 caused the most trouble, as it covered a mile of road with mud and boulders, destroyed some retaining walls, and damaged the supports of one bridge, besides filling with sand the reservoirs of the four water systems.

Immediately outside the park for 7 miles to Rockville a new Federal aid highway was built during the spring months, materially improving the approach to the park. Of the 65 miles from Cedar City 22 miles remain to be improved. Surveys have been made beyond Rockville so that this winter more new road may be built according to plans to Coalpits, Wash., 3 miles, or to North Creek, 8 miles.

#### THE EAST RIM ROAD

The much desired new road to the east rim was temporarily halted pending investigations to determine the best route. Survey of the so-called Parunuweap route is now in progress under the direction of the Bureau of Public Roads.

#### NEW TRAILS

The service's major achievement during the year was the reconstruction of the West Rim and East Rim Trails. Formerly mere routes, they now conform to park standards of 16 per cent average maximum grade, 5-foot width, outside guard wall, inside drainage ditch and level turns. Much credit for these fine trails is due to the energy and skill of Chief Ranger Walter Ruesch, Ranger Donal J. Jolley, and Ranger Harold Russell.

The upper third of the West Rim Trail, an entirely new route, opened to travel on July 11, was formally dedicated by the Crown Prince and Princess of Sweden and in their honor named the Royal Trail.

The upper half of the East Rim Trail is likewise a new trail, climbing through the sheer white cliffs directly to Observation Point thus rendering this famous view point easily accessible.



## ENTRANCE FEE

On the 1st of June was inaugurated the collection of a registration fee of 50 cents from all motorists. It was noted that hardly one objected to the payment of this fee. However, it heavily taxed the small park personnel to handle the added duty.

Of material assistance in this work was the erection, during the winter, of a temporary cottage near the checking station, to serve as a residence for the clerk. This is the first residence to be erected in the park.

## WILD LIFE

No diminution in the number of the deer in the canyon was noticed, while the animals displaying the greatest increase were skunks, and, on the rims, cougars. The latter, constituting a menace to the deer and mountain sheep, were fortunately reduced by one on the west rim in the winter by an official hunter of the Biological Survey, and by 12 during June and July by J. R. Patterson, an unofficial hunter, who also caught one on the east rim.

## NATURE GUIDE SERVICE

The educational department was again in the hands of Mr. Angus Woodbury, of St. George, Utah, who, during the tourist season, maintained the cactus garden and the show case of historical relics, geological specimens and collections of flowers, bugs, butterflies, etc.; enlarged and classified his large variety of plant and insect collections; conducted nature walks several times each week; put up 50 or more signs along the two most popular trails designated as nature trails displaying the names of trees, plants, and flowers; lectured three evenings each week in the public camp grounds on the history, geology, and botany of the park, and three evenings in the recreation hall of the lodge where the projector furnished by the Utah Parks Co., sometimes aided with lantern slides and moving pictures although these were not on park subjects.

## RECOMMENDATIONS

*Acquisition of building site.*—At present a little strip of land extends along the highway southward from the park boundary, owned and occupied by the families of Jacob Crawford and Cyrus Gifford. If the park acquired this land comprising 8 or 10 acres, it is believed that the area near the checking station would then be large enough to contain all the necessary park buildings. Also it would prevent the growth of little shops and shacks for a distance of 200 yards from the park by reason of the narrow rocky nature of the canyon below.

*Buildings.*—With the acquisition of the aforementioned strip adjacent to the checking station area, plans should be made for the location and construction of the buildings which go to make up the administrative and utility groups, including a water system and a sewer. A fine spring, distant 5,900 feet to the north and 600 feet higher, is available for the water-system development. It is believed that no Government shop, office, or residence should be built farther up in the canyon.

*Dormitory for hotel employees.*—It is hoped that plans for the future development of the lodge or hotel group will so far progress this winter as to eliminate the old Wiley camp as quarters for the hotel employees by the construction of one or two first-class modern dormitories.

*Shelter on Observation Point.*—Now that an excellent trail reaches Observation Point the need of a shelter is manifest. As the trees on the point are pinons, with little shade and much pitch, a structure providing a good roof, table for lunches, and seats should be erected. A cistern to catch water from this roof would be desirable as there is no water to be had along the trail.

*A good map.*—The recommendation of last year is renewed for a topographic map of the park by the Geological Survey to be published like the one of Yosemite Valley with the geologic story printed on the back.

## THE SOUTHWESTERN NATIONAL MONUMENTS

FRANK PINKLEY, Superintendent, Blackwater, Ariz.

We have had a prosperous year among the southwestern monuments so far as number of visitors concerned, but we have been under the usual handicap of a totally inadequate force of men to receive the visitors and explain the hundreds of interesting points which we have at each of our monuments. Seventeen of the southwestern monuments had more visitors in the grand total this year than either Yellowstone or Yosemite National Parks had last year, and it was impossible to furnish protection to the monuments and at the same time give information to more than 200,000 visitors with only four full-paid and a dozen part-pay and temporary men.

*Aztec Ruin National Monument*, in northwestern New Mexico, under the charge of Mr. Earl Morris, had 5,646 visitors. We were able to spend some money in repairing walls and protecting this most interesting ruin during the year.

*Capulin Mountain National Monument*, in northeastern New Mexico, under Custodian Homer J. Farr, had a large number of visitors who enjoyed the drive to the top of the mountain, which is one of the most recently extinct volcanoes in the United States, over the new road constructed last year.

*Carlsbad Cave National Monument*, in southeastern New Mexico, is one of the newer monuments and the public is just learning to appreciate it. An easy trail has been constructed into the cavern and a seven-hour trip was given visitors during the year.

*Casa Grande National Monument*, in south central Arizona, has been my headquarters during the year and two of us have received 16,542, visitors showing them around the ruins and through our museum. The prehistoric ruins which cover this reservation are notable as being the last standing ruins of their type in the United States. We were able to do some protection and repair work on the walls during the year.

*Chaco Canyon National Monument*, in northwestern New Mexico, is under the charge of Custodian C. A. Griffin.

As examples of prehistoric architectural skill, the Chaco Canyon ruins are without equal in the whole United States. The ruin of Pueblo Bonito alone—and it is but one of twenty major ruins within the boundaries of the monument—had between 700 and 1,000 rooms and has walls standing at present to a height of nearly 48 feet.

The National Geographic Society Pueblo Bonito Expedition has completed its sixth season of work at Pueblo Bonito ruin under the leadership of Dr. Neil M. Judd. The society has now expended about \$100,000 in the excavation and study of the ruins of Pueblo Bonito and Pueblo del Arroyo on this monument. We have spent about \$3,000 for protection of the ruins from the elements, but have as far been able to get only a nominal salary to keep a man in charge.

*El Morro National Monument* lies 52 miles southeast of Gallup, N. Mex., and is under the charge of Custodian E. Z. Vogt, of Ramah, N. Mex.

On the smooth face of the sandstone cliff of El Morro are the inscriptions of five of the early Spanish Governors of New Mexico, as well as of many intrepid padres and soldiers who were among the first Europeans to visit this part of the New World.

A good supply of clean water was developed at El Morro this year.

*Gran Quivira National Monument*, under charge of Custodian W. H. Smith, in central New Mexico, is of especial interest, because its ruins lap from the prehistoric down into the historic period. The pueblo ruins now on this monument were inhabited long before the coming of the Spaniards and the two missions were erected, one in 1628-1630 and the other between 1650 and 1680. The place was abandoned before the uprising of 1680.

Again during the last year excavation and repair work was carried on in cooperation with the American School of Archaeology, of Santa Fe, N. Mex.

*Hovenweep National Monument*, in western Colorado and eastern Utah, is out of the general path of travel and the ruins reserved on this monument are not known or visited as much as they deserve. Future road construction will make them readily available and they will then come into their own.

*Montezuma Castle National Monument*, lying in central Arizona under charge of Custodian Martin L. Jackson, of Camp Verde, is the most easily

accessible cliff dwelling in a good state of preservation in the Southwest. It was hoped before this to put Mr. Jackson on a full salary; but this was impracticable and the 12,000 visitors who went through the castle this year did more or less damage because we had no one in direct charge. We have thus far been unable to get the funds and must look forward to about 14,000 more visitors next year who will tear down, scratch names, and hunt souvenirs in the finest cliff dwelling in the United States.

*Natural Bridges National Monument* is in southern Utah under the charge of Custodian Zeke Johnson. This monument is reached by trail only. No money was expended at the monument during the past year but trail improvement is planned for next year.

*Navajo National Monument*, in northern Arizona, is under the charge of Custodian John Wetherill and the three fine cliff dwellings on the monument form a most interesting exhibit. Thus far visitors have not been numerous enough to this monument to demand a resident custodian.

*Papago Saguaro National Monument*, located in southern Arizona, is under charge of Custodian J. E. McClain who receives a nominal salary. Here we have reserved a typical section of desert scenery which forms a wonderful contrast with the waving alfalfa fields and beautiful orange groves of the reclaimed desert which surrounds it under the Roosevelt Irrigation Project.

*Petrified Forest National Monument*, in northern Arizona, is under the charge of Custodian William Cox Buehler, who joined our service last April. Mr. Buehler had three temporary rangers assisting him during the summer months and they did the best they could to give service to the 53,000 visitors and protect the monument from vandalism. The greatest need at the Petrified Forest is for one permanent ranger and three more temporary rangers during the season of heavy traffic.

*Pipe Spring National Monument*, in northwestern Arizona, has no custodian, due to a lack of funds. Repair work here is going on at the rate of about \$500 per year and we have already made a great improvement in the looks of the place.

*Rainbow Bridge National Monument*, in southern Utah, the largest natural bridge in the world, has no custodian, and none is really necessary yet. It is reached only by trail and no money has yet been expended upon the monument.

*Tumacacori National Monument*, in southern Arizona, again touches the mission period in the history of the southwest. This mission was first visited by Padre Kino in 1691, and the present walls were erected about 1800. It is one of the most charming and interesting of the ruined missions in the United States. Some repair work was carried on during the past year.

*Wupatki National Monument*, under charge of Custodian J. C. Clarke, of Flagstaff, Ariz., had its usual number of visitors during the year. Wupatki contains some very interesting ruins belonging to a little known phase of the prehistoric culture of northern Arizona.

*Yucca House National Monument*, in southwestern Colorado, is one of our little known and little visited monuments. The ruins on this monument will have to be excavated before they can be appreciated by the visitors. When that is done, Yucca House will be one of our most interesting monuments.

The number of visitors at the various southwestern monuments during the past season has been as follows:

Aztec Ruin.....	5, 646	Navajo .....	250
Capulin Mountain.....	14, 965	Papago Saguaro.....	53, 000
Carlsbad Cave.....	10, 904	Petrified Forest.....	53, 345
Casa Grande.....	16, 542	Pipe Spring.....	16, 728
Chaco Canyon.....	2, 500	Rainbow Bridge.....	300
El Morro.....	5, 794	Tumacacori.....	13, 683
Gran Quivira.....	1, 577	Wupatki.....	600
Hovenweep.....	250	Yucca House.....	150
Montezuma Castle.....	12, 385		
Natural Bridges.....	68	Total .....	207, 783

## REPORT OF THE CIVIL ENGINEERING DIVISION

BERT H. BURRELL, Acting Chief Civil Engineer, Yellowstone Park, Wyo.

At the commencement of the fiscal year 1926 practically all road work, both survey or construction, was in control of the civil engineering division, either directly or through supervisory control of funds or engineering.



During the month of December provision was made for the complete reorganization of this division, and for turning over to the Bureau of Public Roads through interbureau agreement practically all of the going contracts and the principal surveys for major projects.

The reorganization was practically completed during the month of February and all major road work and survey projects were turned over to the Bureau of Public Roads, except the road work in Mesa Verde, Platt, Hot Springs, Wind Cave, and Lafayette National Parks, certain small projects in Yellowstone, and the Mount Cannon section of road in Glacier Park. The contracts for the Mount Cannon road and the Platt Park roads were completed by this division and also the construction work in Hot Springs and Wind Cave.

As a result of the reorganization the personnel of the division was reduced from a total permanent engineering force of 11 to 3, and the clerical force from 4 to 2. Three new resident engineers were appointed and all resident engineers, numbering six, were placed under the advisory control of the new engineering division. The office was moved from Portland, Oreg., to Yellowstone Park during March.

The division is now functioning more along general engineering lines than formerly, and is working on the coordination and systemization of construction and maintenance methods in all parks.

Not the least of the new duties will be the accomplishment of general supply contracts by the engineering division, which will enable all parks to take advantage of concerted buying prices for all construction and maintenance staples, machinery, etc. The savings resulting from this method of buying apply not only to prices, but avoid a multiplicity of contracts for the same articles and corresponding clerical work in both parks and Washington. There is also a better opportunity to take full advantage of land-grant railroad rates and cash discounts.

Seven general contracts are now in force for the fiscal year 1927 covering road equipment, fire-fighting apparatus, standard road and trail signs, danger signals, boundary signs, and blue prints. Other contracts for general building supplies will be entered into as soon as the necessary information can be obtained.

Authority was given the division to act as intermediary between the parks in the exchange of surplus materials and equipment. Equipment with a valuation of several thousand dollars has already been transferred under this arrangement with a corresponding saving to the receiving park. The acting chief civil engineer and the maintenance engineer have been making studies in the field of all park and many State and county maintenance systems with a view to standardizing such work in the parks beginning the 1927 season. Special study and observation is now being made of methods of dust elimination for application to all parks in the near future.

A new unit cost-accounting system was put in force beginning August 1, which is expected to obtain accurate construction and maintenance cost data for future estimates. The calls upon the civil engineering division are increasing rapidly and will soon necessitate a substantial increase in the present force.

## REPORT OF LANDSCAPE ENGINEERING DIVISION, 1926

DANIEL R. HULL, Landscape Engineer, Los Angeles, Calif.

Roads and trails, gateways and bridges, hotels and camps, along with numerous other problems, have occupied the time of the landscape division during the year just closed. With the progress being made in various parks comes the need for protection of the landscape, and herein lies the chief work of the landscape division.

"Cleaning up" has been one of the tasks in the parks which has brought most favorable comments from the travelers, most noticeable results in this respect being the roadside clean-up in Yellowstone and the removal of old buildings from Giant Forest to a new village site.

Following is a list of the parks and monuments visited by a member of the landscape division, with a brief outline of some of the more important landscape projects.

### CRATER LAKE NATIONAL PARK

New industrial and administrative center planned in conjunction with new road layout. Improved conditions around hotel. Bridge and development at Anna Springs. Gateways.

## GLACIER NATIONAL PARK

Comprehensive road layout in conjunction with Bureau of Public Roads, together with study of various tourist centers to provide for each class of traveler. Constant inspection of Trans-Mountain Road.

## MOUNT RAINIER NATIONAL PARK

New buildings for park entrance. Improvement of Longmire and Paradise Auto Camps with construction of community house for latter. Study of Longmire area to be utilized for hotel. Government and company headquarters. Review of west side road project and inspection of all road and bridge work in park.

## LASSEN VOLCANIC NATIONAL PARK

Inspection of road projects with recommendation for priority of certain roads to open up more important areas. Erection of ranger station and survey of future requirements.

## GENERAL GRANT NATIONAL PARK

Review of road layout and restudy of community center with location for new lodge, service station, etc.

## SEQUOIA NATIONAL PARK

New village for Giant Forest at edge of forest and removing buildings from heart of forest. Road location studied for Giant Forest area and new road to Grant Park.

## YOSEMITE NATIONAL PARK

Worked with public operator's architect on hotel plans and location, also new stable group. Road and bridge changes for valley floor. Big Oak Flat road relocated for better grade and alignment. New checking station at Arch Rock. Gas stations at Chinquapin and Yosemite lodge. Sites chosen for fish hatchery and new church.

## GRAND CANYON NATIONAL PARK

Additional buildings in Government industrial area. New village plaza taking shape, with new road entering it and new store in operation. New auto camp to be one of the finest in the United States, with community room and delicatessen, comfort station, etc. North rim roads surveyed with Bureau of Public Roads representatives.

## YELLOWSTONE NATIONAL PARK

Improvement of auto camp. Shop at Devil's Kitchen. Removal of telephone wires and roadside litter.

Numerous improvements by operators, including restudy of Old Faithful Camp headquarters. New road locations covered on ground.

## ZION NATIONAL PARK

Increased capacity of Zion lodge and development of utility group by public operator under plans approved by landscape division. Several small park structures erected during year.

Comprehensive landscape plan being carried out in vicinity of new lodge.

## ROCKY MOUNTAIN NATIONAL PARK

Studies for utility group and various operators' developments. Inspection of road work and approval of road location. Plans for shelter building on Longs Peak.

## PLATT NATIONAL PARK

Inspection of road work, improvement of springs, and development plan for utility group. Plans for an amphitheater to be built by the women's club of the State and used for chautauquas.

## HOT SPRINGS NATIONAL PARK

Plans for improving Government headquarters. Arlington Hotel Park and Government stable. Inspection of road work.

Several monuments were also visited during the year and improvements carried out or suggested.

## SUMMARY

Summing up, we find various needs confronting the landscape division:

1. That the \$1,500 clause be stricken out entirely as a limit on Government buildings, or at least that it be increased to double the present amount.
2. That the work of procuring maps of occupied areas, as a base for intelligent planning, be carried on.
3. That we be enabled to secure more careful cost data on structures in parks in order to judge the cost properly for future operations.
4. That the work of preparing comprehensive five-year development programs in every park be urged.

## REPORT OF THE EDUCATIONAL DIVISION

ANSEL F. HALL, Chief Naturalist, Berkeley, Calif.

The accomplishments of the educational division during the past year fall logically into three subdivisions:

1. The careful planning of the educational programs for the parks collectively and for some individual parks.
2. The solution of educational problems pertaining to all the parks, such as the review and preparation for printing of natural history bulletins; the development of an information manual for Yellowstone, thus working out principles which can be applied in similar volumes for other parks; the organization and equipment of the headquarters of the educational division at Berkeley, Calif.; and other such extensive activities.
3. The establishment and improvement of educational work in individual parks, including the inauguration of activities in Crater Lake National Park; enlisting of cooperation from private individuals which resulted in donations of material and services in several parks; securing of surplus Government equipment to the value of several thousand dollars for Yosemite and Crater Lake National Parks; construction of museum exhibits for Yellowstone National Park; inspection and individual work in numerous parks, including the establishment of three nature trails, a wild flower garden and a branch museum in Yellowstone National Park.

Under the first subdivision of activities, namely, the planning of the educational program, most attention was paid to the broad educational plan approved by the Secretary in September, 1925. This plan lists the park educational activities as follows:

## 1. Information office:

- (a) Information offices maintained by full-time ranger naturalists.
- (b) Information offices maintained by regular rangers (usually alternating).
- (c) Information substations; visual material (no ranger in charge).
- (d) Signs and posters at points of scientific interest, including special "nature trails."
- (e) Signs, posters, literature, and announcements telling of educational activities in the park.
- (f) Radio broadcasting.

## 2. Books and publications:

- (a) Park library and branch libraries.
- (b) Sale of park publications, both governmental and general.
- (c) Publications by educational staff:
  - Nature notes.
  - News articles.
  - Scientific articles.
  - News items on menus and other park utility cards.



3. Visual education:
  - (a) Photographs.
  - (b) Lantern slides.
  - (c) Motion pictures.
4. Museum and branch museums:
  - (a) Administration.
  - (b) Building and properties.
  - (c) Accessions and preparation of exhibits.
  - (d) Cooperation and extension service.
5. Botanical field exhibits:
  - (a) Wild-flower gardens (including mosses, ferns, lichens, fungæ, etc.).
  - (b) Arboretum.
  - (c) Labeling of trees, flowers, etc., in the field.
  - (d) Cut-flower displays.
6. Animal exhibits:
  - (a) Wild-life sanctuaries.
  - (b) Attracting and taming animals (feeding, planting of bird food, bird baths, etc.).
  - (c) Mammals in captivity—zoo.
  - (d) Birds in captivity—aviary.
  - (e) Reptiles, amphibia, etc.—terrarium.
  - (f) Fish—aquarium, fish hatchery, planting of fish.
7. Preservation of sites of educational interest (including restorations).
8. Field trips conducted by educational staff:
  - (a) Nature guided trips (ranger naturalist in charge).
  - (b) General information trips (regular ranger in charge).
  - (c) Special guide trips by visiting specialists.
9. Lectures:
  - (a) Popular lectures by nature guide rangers.
  - (b) Technical or semitechnical lectures by visiting specialists.(Announcements of lectures and guide trips mentioned under 1-(e).)
10. Schools of field natural history:
  - (a) Courses for the training of nature guides.
  - (b) Courses for the general public.
11. University courses offered in parks.
12. Research: Chiefly dependent upon cooperation with visiting specialists.
13. Miscellaneous:
  - (a) Special visitors.
  - (b) General cooperation, etc.
  - (c) Pageants, etc.

Approval of the principles set down in this broad educational plan officially established the educational division of the National Park Service. This educational summary also sets forth the duties of the chief park naturalist, park naturalists, and other educational officers. The keynote of the plan, however, is the "educational working plan" for each individual park. This educational working plan is vitally necessary for development in individual parks for the following reasons:

- (a) In order to summarize the educational possibilities and to obtain a perspective of all educational problems;
- (b) In order to provide for a gradual and logical development; and
- (c) In order to plan a budget which will accurately list all necessary expenditures whether it is expected that these expenditures will be made by Government appropriation or by private cooperation. Careful attention to the formulation of these working plans means the application of business efficiency, which will result in the success of our educational work.

During the past year a preliminary educational working plan has been developed for Yellowstone National Park and work has been done upon similar projects for both Yosemite and Mount Rainier.

The educational activities in the national parks were thoroughly discussed at the superintendents' conference in Mesa Verde National Park in October, 1925, and at the first chief rangers' conference in Sequoia National Park in January, 1926.

During the past year much time has been devoted to the securing of office equipment, tools, and other supplies from the Veterans' Bureau, the United States Shipping Board, the Bureau of Public Roads, and other Government organizations. This was a necessary preliminary to museum exhibit construction, and even office work at the headquarters of the educational division,

since no appropriation had been made for the equipment of these headquarters. Equipment to the value of several thousand dollars was secured and much of it reshipped to the Yosemite Museum and to Crater Lake National Park.

Special attention has been paid to the establishment of a reference library at educational headquarters and in individual parks. About 100 volumes, secured through cooperation, were shipped from educational headquarters to the Yosemite Museum where they are in use in the library which has been established at that point.

The work of Garnet Holme, pageant master for the National Park Service, was kept in closest touch with that of the educational division through frequent conferences in San Francisco. Besides the larger historical and allegorical pageants produced or written by Mr. Holme for Sequoia, Yosemite, and Yellowstone National Parks and for Pinnacles National Monument, another type of entertainment was developed as an experiment. A shorter and very amusing skit was written for Yellowstone, its purpose being to call attention in an incidental but impressive way to the educational opportunities offered by the National Park Service to visitors.

After the first tools had been received at educational headquarters, the construction of museum exhibits was carried on by the chief naturalist. Lack of assistance and press of other duties, however, greatly delayed this work. Two portable working models of geysers, each erupting to a height of  $2\frac{1}{2}$  feet approximately every minute, were produced and shipped to Yellowstone National Park for use in the main museum at Mammoth and in the new branch museum at Old Faithful.

The establishment of educational activities in Crater Lake National Park during the past season under the direction of Dr. Loye Holmes Miller, proved how urgent is the need for such work in the parks in which such development has not as yet taken place. Doctor Miller's personal efforts were augmented by the voluntary services of three competent assistants, so that we were able to offer daily guided field trips and lectures, to maintain exhibits of cut wild flowers, to start a small museum, and to compile check lists of the mammals, birds, and flowers of the region.

Personal attention of the chief naturalist and several members of the Yellowstone educational staff was given to the establishment of three nature trails in the Old Faithful region. Here we were facing the stupendous problem of attempting to serve 2,500 persons daily with the services of only two ranger naturalists available. The formation trail and the Black Sand Basin Trail were, therefore, carefully labeled with all the geological data that could be supplied by the ranger naturalists. Additional bits of natural history were pointed out. A new loop trail was built to Observation Point and Solitary Geyser and developed as thoroughly as possible as a nature trail, not with the purpose of replacing in any way the formation trails but to supplement them. The wild flower garden and branch museum started at this station will require additional development next season.

In examining all the accomplishments of the educational division during the past season in retrospect, one important conclusion stands out before all others. In the development of definite detailed plans, in administration of general park educational activities, in detailed work in the parks, in museum construction—in short, in all of the many educational activities—progress is limited by the lack of adequate assistance and will progress in proportion as such assistance is provided.



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